THE TWELFTH LACUS FORUM 1985

THE TWELFTH

LACUS FORUM

1985

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THE TWELFTH LACUS FORUM 1985

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LINGUISTIC ASSOCIATION OF CANADA AND THE UNITED STATES
P.O.B. 101, Lake Bluff, Illinois, U.S.A. 60044

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FIRST EDITION

Published in Lake Bluff, Illinois, by LACUS, The Linguistic Association of Canada and the United States, P.O.B. 101, Lake Bluff, Illinois 60044 U.S.A.

Manufactured in the United States of America.

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INTRODUCTION

The twelfth annual conference of LACUS was held from 5-9 August, 1985, at the University of Saskatchewan in Saskatoon, Saskatchewan, Canada. Occurring during the University's 75th anniversary year, the Twelfth LACUS Forum was the first major linguistics conference ever held on the Saskatoon campus. We hope it may prove to have been the first of many. More than forty papers were presented by linguists from Canada, the United States and several European, African and Asian countries. The Forum was opened with a wine-and-cheese reception and a brief welcoming address from the President, Robert A. Hall. It was further highlighted by the Presidential Banquet and Presidential Address on the 8th. The Inaugural Lecture was given by Walter Hirtle of Laval University, and the Invited Lecture by Igor Mel'čuk of the University of Montreal. Informal workshops on computers in linguistics and on language origins were also featured.

Our special thanks are extended to the President of the University of Saskatchewan, L. F. Kristjanson, for the grant of $2,000 placed at the Association's disposal to help defray the cost of the banquet. We are also grateful to the Saskatchewan Executive Council for making a grant of $500 for hospitality.

LACUS may justly take pride in the diversity and fertility of research represented by the papers given at this, as at previous, conferences. That diversity, however, poses something of a problem in drawing up a perspicuous Table of Contents. We ask our contributors' indulgence if the categories under which their papers appear are not those they would have chosen.

Finally, we express our thanks to all whose time and effort contributed to the success of this conference.

Mary C. Marino
Luis A. Pérez

I

SPECIAL LECTURES

1985 PRESIDENTIAL ADDRESS

IDIOLINGUISTICS

Robert A. Hall Jr.

Cornell University

There have already been quite a number of new formations with the prefix *idio-*: *idiolect, idioculture,* and so on. This evening I am going to inflict still another such neologism on you, with perhaps a broader implication than any of the preceding: IDIOLINGUISTICS. By this term, I mean the study of language based on the recognition that the fundamental unit of a speech-community, the only one with a real-life existence (i.e. not an abstraction) is the individual speaker, and that, similarly, the only linguistic systems with real existence are those of the individual speakers, i.e. their idiolects. These statements may seem like truisms, which ought to be obvious to any-one on a moment's reflection, but another moment's reflection should make us realize that, in our normal discussion, analysis, and formulation of linguistic phenomena we pay very little attention indeed to the facts concerning individuals and their linguistic behavior that I have just called to your attention.[1]

First, let us consider the every-day use of the terms LANGUAGE and DIALECT. A very wide-spread view of both languages and dialects is that they exist somewhere, in some kind of ideal world, over, above, and outside of their speakers. This conception of their nature comes quite easily to a great many naïve speakers, who perceive, even in non-literate communities,[2] that in many instances other speakers not only use the community's means of communication differently from the way they themselves do, but are also often regarded as in some way superior and norm-setting. In reality, every such norm, whether officially codified or not, has no basis in the facts of language themselves and is always wholly socially determined.[3] I have tried to show elsewhere[4] that linguistic norms are always either artificial or statistical. Of the first kind are those set up by prescriptive grammarians and academies.[5] Of the second type is the naïve speaker's 'linguistic super-ego',[6] which he or she sets up on the basis of (usually) vague impressions gathered in the course of every-day living, plus whatever folk-lore about language he or she may pick up from other individuals.[7]

Each one of us lives and dies inside his or her own skin.[8] This is true of each person's idiolect, in its origin and development over the years, as well as of every other aspect of his or her being. What needs to be emphasized here is that, as I have tried to show elsewhere,[9] a speaker's idiolect does not simply

grow during childhood and then reach a point of stasis, with no further change. Our idiolects keep on changing all the time (albeit more slowly, as we grow older), in the same way as all the other facets of our physical and intellectual make-up, whether we realize it or not. New words, new morphosyntactic features, even new phonological developments may swim into a person's ken and be responded to (at least passively) even up to the last day of life.

Such changes, furthermore, do not take place all at once, in the usage of either a speech-community (taken as a statistical average) or in that of each single speaker. Passive learning of linguistic features begins, not only at birth, but according to a growing body of evidence, before birth, with the foetus hearing sounds from the third or fourth month of gestation onward.[10] Active command develops rapidly during the first few years of life,[11] and then slows down, but — as we have just said — never ceases entirely. Every-one is continually hearing (and often imitating) previously unheard language-phenomena, and we are making nonce-formations all the time.[12] So far as each idiolect is concerned, any such innovations are held within bounds by the willingness or unwillingness of other speakers to react to them. From the viewpoint of the speech-community, the beginning of any linguistic change takes place when a given speaker's innovation is accepted, imitated, and taken over by at least one other speaker.[13] From this point on, an innovation may remain restricted to the usage of only a few persons, as in many 'family-dialects',[14] or may spread eventually to the entire speech-community.[15]

So far, we have been purposely concentrating, in an elementary way, on the usage of individuals in their idiolects. Every-one, layman and linguistic scientist alike, makes a further abstraction, setting up an entity beyond the idiolect, to cover the usage of more than one individual — anywhere, in fact, from two to many millions of idiolects. There is no harm in so doing, provided we recognize the abstract nature of the entity we are thus hypostatizing, and do not reify it, i.e. treat it as something having an independent existence apart from and beyond the idiolects on which it is based. The usually accepted term for such a super-idiolectal entity is DIALECT.

We can now proceed to the widely debated question of LANGUAGE and DIALECT. There is general agreement, I believe, among both specialists and the lay public, that the first of these two terms has, in some way, a more all-inclusive reference than the latter. On the way in which the two terms differ, however, there is no agreement. For the layman, the difference is one of quality: a language is somehow superior to a dialect, in beauty, intellectual merit, or purity.[16] Reacting against such naïveté,[17] scholars in linguistics have sought more objective definitions of the difference. There have been a few attempts at defining a language by setting up structural criteria, e.g. the correspondence of its 'underlying representation' in phonology with that of a group of

related dialects.[18] Most scholars, however, have seen the distinction between language and dialect as essentially non-linguistic in nature.[19] In this view, a language is simply one of a group of related (i.e. similar) dialects which has come to occupy a special position of prestige because of the predominance of some of its speakers in one respect or another — usually political,[20] less often economic, occasionally religious, but only rarely literary.[21] Such a prestige-dialect usually starts as a regional κοινή.[22] It may then remain on the regional level,[23] or may become the standard of an entire nation,[24] with new regional varieties of the standard arising on the basis of local dialects which the latter has come to overlay or replace.[25] But all these manifestations take place exclusively in the real-life linguistic activity of individual speakers, i.e. in their idiolects.

As I write and say these things, I am very conscious of their unoriginality — but also of the extent to which these considerations have been neglected in a very great part of our study of language, in all its different forms.[26] It seems to me that, if we take the idiolect fully into account as the basic, the only really existent element in the linguistic activity of any speaker or group of speakers, we need to introduce extensive modifications into our view of language, its function in our lives, and its vicissitudes in the course of time.

The most fundamental change that we need to introduce is the recognition of the lack of absolutely sharp definition, the all-pervasive 'fuzziness', in every aspect of human language. In no respect is any idiolect — and, *a fortiori*, any dialect or language — a 'well-defined' system.[27] In each idiolect, there are fluctuations in sounds, forms, and meanings — especially the latter,[28] but in the former as well. There is, we are told,[29] a large element of redundancy in phonology, which I have heard estimated at around fifty percent. There are similar looseness in the meanings of, not only lexical, but also morphological and syntactic features. These loosenesses are not defects — quite the opposite. They are essential for ordinary every-day communication, so that approximate comprehension can take place under conditions which are often none too favorable. Exact mathematical precision is, in ordinary life, attainable only in very limited circumstances, e.g. telephone-dialing.[30]

It follows that attempts to regard linguistic systems as 'well-formed', precise, exact, and self-contained are badly mistaken. There is an old dictum, usually framed as defining a language as 'le système où tout se tient', a system in which everything is related to everything else.[31] This notion of a language as a closed system of purely abstract relationships has had very bad effects on the study of both language and literature. In linguistics it has led to the neglect, even the denial,[32] of phonology as an essential part of language. In literature, the misunderstanding of such Saussurean (or, better, pseudo-Saussurean)

doctrines as those of language as a pure system of relationships and of 'l'arbitraire du signe' has led some critics to deny that language has any reference except to itself, and hence to assert that a literary critic can interpret a work of literature in any way he wishes, regardless of any meaning signalled by the language of the text.[33]

This basic consideration holds true whether or not we adopt the fiction that time is not passing while people are interacting by means of language. Once we abandon this fiction — which is, admittedly, useful on occasion[34] — we need to do some further re-thinking in the light of the inevitable passage of time.[35] There are at least three major aspects of human linguistic activity involved: the life and growth of each person's idiolect; the relations between dialects; and the nature of linguistic change. We have already pointed out that every person's idiolect is constantly changing. This process takes place primarily as a result of IMITATION of what a speaker hears from other speakers (also, of course, but to a lesser extent, through analogical new formation within his or her own usage). I have just said 'hears': one could, perhaps, amplify that expression by adding 'or re-interprets what he or she hears'. Not all imitation of other persons' usage is accurate, at any 'level' of structure. Many speakers of American English use, in words like *train*, a sequence of sounds [tř], which (to my ears and many others') is easily confused with [tʃ], so that I am often puzzled as to whether I have heard, say, /trějn/ *train* or /čějn/ *chain*. Enough mis-hearing of this kind, generalized by imitation throughout the speech-community, could eventually lead to a merger of /tr/ and /č/. On one occasion, I heard a lady who considered herself a speaker of 'correct' English making fun of a lower-class person's *hern* (possessive pronoun) and then saying 'she is the kind of person who would say *I haven't hern nothing of the kind*'. The 'correct' speaker re-interpreted the possessive *hern* as if it were an ignorant person's past participle of *hear*.[36] Most semantic change is of this type, with a speaker extending the reference of a linguistic form beyond that which it has in others' usage.

No speech-community, at least in the modern world, is wholly compact or totally isolated. Unlike plants, humans move about, over shorter or longer distances, and thereby come into contact with other speakers whose language is inevitably at least slightly different from their own. Furthermore, some speakers are more ready to imitate unfamiliar usages than are others. This means that, especially with modern transport-facilities, speakers of dialects A, B, or C are travelling and coming in contact with other dialects all the way to X, Y, and Z. Students of dialectology have long known that the materials of linguistic atlases represent only samplings, and that the isoglosses we draw between points on a map are at best only appproximations, based on the fiction that the speakers of the dialects involved are all staying in the same place all the time.[37] In actuality, the isoglosses are always on

the move. In theory, to be absolutely accurate, our maps should be extended to include even speakers with 'down-East' accents living in (say) Western Australia and vice versa — a manifest cartographic impossibility, of course. There is one person in the English-speaking world — and, so far as I know, only one person — who refuses to use the word *car* for anything except a vehicle that runs on rails. The isogloss surrounding that person — myself — goes around all over the world, wherever I go.

Yet we must not take this observation to imply that there is no such thing as a dialect. Some people imitate less than others, and some move about less than others. It is the stay-at-homes, the linguistic stick-in-the-muds, whose usage forms the nucleus of any given dialect. It is the continued existence of their usage which justifies us in recognizing dialectal divisions, although the boundaries between dialects are not as sharp as used to be thought. This is why conscientious dialectologists — whether working in linguistic geography or not — are very careful in their choice of informants, and check thoroughly the authenticity and dependability of the information gleaned from their sources. Material obtained with sloppy checking or none at all[38] can never give anything except a random sample, of doubtful reliability for either historical or sociolinguistic study.

That all languages change, and inevitably, has been a commonplace ever since Dante's observations:

> Cum igitur omnis nostra loquela, praeter illam homini primo concreatam a Deo, sit a nostro beneplacito reparata post confusionem illam quae nil fuit aliud quam prioris oblivio, et homo sit instabilissimum atque variabilissimum animal, nec durabilis nec continua esse potest; sed sicut alia quae nostra sunt, puta mores et habitus, per locorum temporumque distantias variari oportet.
>
> [De vulgari Eloquentia I.ix.6]

'Since, therefore, every human language, except that which was created together with the first man by God, was restored according to our pleasure after that confusion [of the tower of Babel], which was nothing else than the forgetting of the previous language, and man is a most unstable and changeable being, can be neither lasting nor invariable; but, like other human matters, such as customs and habits, it has to vary over distances of space and time' —

and also, as Dante has Adam say:

> La lingua ch'io parlai fu tutta spenta
> innanzi che a l'ovra inconsumabile
> fosse la gente di Nembrȍt attenta:
> ché nullo effetto mai razionabile

per lo piacere uman che rinnovella
seguendo il cielo, sempre fu durabile.
[Paradiso 26.124-129]

'The language which I spoke had entirely vanished before Nimrod's people were engaged in the unaccomplishable task [of the tower of Babel]; for no product of reason was ever permanent for all time, because of human inclination, which varies with the heavens'.

In general, observers of linguistic history have almost always asked 'Why does language change?',[39] as if its mutability were something that had to be explained, as opposed to an expected immutability. If anything, however, one should ask 'Why shouldn't language change?', and the corollary question 'Under what conditions does language NOT change?'. As we all speak to each other, there are always fluctuations and variations in what each of us says, including not only alternations within accustomed limits (e.g. between the allophones of /tr/ or the past participle of verbs like *dive*), but also random 'errors', 'slips of the tongue', and the like.[40] Only under very artificially controlled conditions does language not change (as in mathematics and formal logic) or does its change slow down drastically (as in 'dead' languages like Latin and Sanskrit).[41]

In this situation, then, one might expect language to change, indeed, but at random. From the very short-range point of view, this seems to be so. We can observe various changes taking place under our eyes — or, perhaps better, within our hearing — but they are, taken individually, too limited in their extent to form any clearly perceptible pattern. But, when we have enough documentation over the centuries, certain fundamental regularities, certain over-all directions, do emerge, although (tantalizingly) not in their entirety. Not only single phonemes, but entire phonemic patterns, show systematic change,[42] and the same is true of morphological and syntactic systems.[43] The nature and relationships of these changes have been identified and discussed extensively in the last two hundred years, but no-one has yet succeeded in isolating any factor(s) which would enable us to predict future changes except (perhaps) in a most general way. In this respect, linguistics is in a position similar to that of geology. In both, we are dealing with past events,[44] but the various influences at work are too manifold and their combinations too random for us to foresee them.

But from the long-range point of view, at least the longest range available to us based on our perception of past events (through documentation and reconstruction)? Many earlier scholars, from the Renaissance onwards,[45] regarded language-change as a process of growth, perfection, and decay, similar to the life-cycles of individual organisms. Modern languages would, in this view, be the decadent latter-day stages of earlier, more nearly perfect languages such as Latin, Greek, or Sanskrit,[46] and the

simplification of inflectional paradigms would be a sign of decay. Reacting against this view, Otto Jespersen[47] turned it around and regarded the development from 'synthetic' structure (complicated morphology and simple syntax) to 'analytic' (simple morphology and complicated syntax) as constituting progress. Edward Sapir, without taking a definitive stand on the matter of 'progress', proposed the concept of 'drift' for an over-all direction of change, across at least several millennia.[48] At the beginning of this paragraph, I spoke of a 'long-range' point of view; but even this time-depth, only about six thousand years, is quite short in contrast to the total length of time, half-a-million to a million years, customarily assumed for the existence of humank-kind. Attempts at reconstructing earlier stages of language are therefore inevitably quite speculative.[49]

Only with a reasonable time-depth, and given at least relatively adequate data, therefore, can we discern any approximation of regularity in language-change — and, even then, our information concerning people's use of language in the past dates from only a few millennia back. In this situation, those who study earlier stages of language have found that the assumption of regularity in sound-change is an invaluable aid in sorting out the otherwise bewildering confusion of often conflicting data.[50] Others, working primarily on a synchronic basis and especially in dialectology, have denied the validity of this assumption.[51] The latter group have been accused of concentrating their attention on individual details and hence of being 'unable to see the wood for the trees'.[52] The 'regularists', on the other hand, often tend to see only the over-all results of a linguistic change and hence might be said to be 'unable to see the trees for the wood'.

These apparent contradictions in linguistic theory can be explained, I believe, by the fact that there are several strands of linguistic change, all of them rooted in different aspects of each individual's activity. As mentioned above, we all have variations in our usage, including aberrations such as metatheses, haplologies, 'Spoonerisms', confusions between words (malapropisms),[53] and so on. These may remain on the level of nonce-aberrations, which a speaker recognizes and 'corrects' immediately; or they may, in any given individual's usage, become habitual and end up as part of his or her regular speech-behavior, very often outside of awareness.[54]

In addition to these slips, however, there can often be a gradual passage in a speaker's habits of pronunciation, e.g. from a front to a back vowel, or from a non-palatalized to a palatalized sound. One person may do this spontaneously, or a group of people may do so, often as a fad or in imitation of some prestigious person(s).[55] As the novelty spreads from person to person and then from group to group, the innovation eventually becomes universal, and we have a 'regular' sound-change.[56] The same process takes place in the spread of morphological, syntactic, and lexical

replacements. The situation is rather like that which Heisenberg observed[57] for the expansion of gases: the movement of individual molecules seems to be random, but the over-all average of the behavior of the groups of molecules is predictable. In linguistics, it has been found, purely as a pragmatic guide-line, that it is most helpful to identify first the regularities of change, so as then to be able to sort out the irregular phenomena. To return to our arboreal metaphor, the trees exist as individual, real-world phenomena, and the wood exists as an abstraction deducible from the relationships of the trees to each other, and we must account for both.

In all of this discussion, I have been emphasizing the role of the individual speaker, because it is habitually neglected in so many discussions which treat language as if it were primarily or even wholly a collective activity. If you want to change my title slightly and re-phrase it as 'Idiotic Linguistics', I don't mind, provided you take *idiotic* in the sense of its Greek etymon ἰδιοτικός 'of or pertaining to a single individual'. John Donne, in what is probably his best known passage, affirmed *No man is an island*, and this dictum is often quoted nowadays to emphasize that none of us lives wholly independently of other human beings. Perfectly true; but Donne's metaphor was, nevertheless, poorly chosen. To my way of thinking, every person is an island, as it were, emerging from the sea of time for a brief spell and then sinking back into it — but with many bridges to other similar human 'islands'. The more bridges each of us can build to other 'islands', the more friendly and profitable exchange we can carry on across them, the better; and it is primarily language, more than any other human institution, which enables each of us to build and maintain those bridges from his or her 'island' to the others.

NOTES

1. The only modern scholar to have paid sufficient attention to the rôle of the individual, while at the same time taking into account his or her social relationships, was Otto Jespersen, especially in his *Mankind, nation and individual from a linguistic point of view* (1925). Most other scholars (e.g. Saussure [1916], Sapir [1921], or Bloomfield [1933]) tend to down-grade the importance of the individual in contrast to the usage of the speech-community regarded as a unified whole.

2. Discussed for Menomini (an Algonquian language) by Bloomfield (1927).

3. This was fully demonstrated, for eighteenth-century English, by Leonard (1929).

4. Cf. Hall (1950).

5. The Académie Française is the most notorious example of a governmental agency set up to function (whether under royalty, empire, or republic) as a kind of official 'Big Brother' to watch

over approved usage.

6. Cf. Hall (1951).

7. Discussed extensively in Hall (1944).

8. There is certainly no need to assume any kind of 'super-organic', as shown conclusively by Sapir (1917).

9. In Hall (1968a), especially Chapter 2.

10. This phenomenon would explain, among other things, why a baby's first linguistic manifestation is (as is well known) the development of intonation.

11. Humans' learning of language is simply a part of the overall learning-process, and does not require the assumption of a special 'Language-Acquisition-Device"; cf. especially Derwing (1973) and Stemmer (1973).

12. When I was gathering material regarding the formation of 'noun-incorporation' (of the type *to gate-crash*, *to baby-sit*) in modern English, as reported in Hall (1956), I noticed an average of one such new-formation per week; they always went unquestioned and un-commented-on in the flow of normal conversation.

13. As pointed out by Householder (1972).

14. In my family, for instance, my children's earliest attempts at saying *music*, *attic*, and *accident* came out as 'moogis', 'ackit', and 'ackisent', which have remained in our family-dialect ever since. In another family, *fried mush*, which was served every Sunday night, was folk-etymologized to 'Friday mush'. This term similarly remained in their usage, often with humorous comments about the incongruity between its name and the day of the week on which it was served.

15. Many variants of personal names are of this type (e.g. *Molly*, *Polly*, *Meg*, *Maggie*, *Ted*, etc.), and also various ordinary words, such as colloquial British English *niff* 'smell,' *niffy* 'smelly', nursery-word variants based on *sniff*.

16. As codified in the prescriptions of many purists, such as the nineteenth-century Lindley Murray, and the elucubrations of their twentieth-century followers.

17. Cf. the discussion in Hall (1950).

18. Such a formulation suffers from the same defect as do other 'generative' approaches to language, i.e. being based on an unacknowledged fiction (in this case, an 'underlying representation').

19. The best discussion of the relation between dialect and standard language is in Jespersen (1925: ch. 3).

20. Under this heading come most European standard languages (e.g. English, French, Spanish), including those which have been put together and recommended by single individuals (e.g. Ivar Aasen's Landsmål and Vuk Stepanović Karadjić's Serbo-Croatian.

21. The prestige of great authors can, on occasion, be a help to the establishment of a literary standard (as was the case with Dante, Petrarch, and Boccaccio in Italy), but only for a limited public and not on a nation-wide basis. For the latter, political unification seems to be virtually a *sine qua nonñ* cf. my discussion in Hall (1964: ch. 61).

22, In which the standard is derived from the dialect of a local centre, not as the inhabitants of that particular place speak it, but as do those who come in from the surrounding area, as pointed out by Jespersen (1925:64-71).

23. As in the case of Swiss German and Venetian, both of which serve for communication among the inhabitants of their respective regions, even on the most prestigious social levels.

24. For an attempt at establishing a comparative morphology of the development of standard languages, cf. Hall (1976).

25. Recently, a great deal of attention has been paid to 'italiano regionale' (cf. Hall [1968b, 1980]) and to 'le français régional'.

26. I would differentiate at least three main types of study devoted to language: (1) philosophical speculation as to its nature and origin; (2) prescriptive, normative pronouncements as to the 'best' usage; and (3) discussion of its structure and history on (at least, in intent) a scientific basis. Cf. my discussion in Hall (1976:227).

27. As pointed out by Hockett (1968: ch. 3, 4).

28. Cf. Hall (1972).

29. Cf. Shannon and Weaver (1949); Hockett (1953).

30. This point is illustrated by an old Viennese anecdote. Two friends, Graf Bobbi and Baron Mucki, are discussing the telephone which the latter has just had installed, and the following conversation takes place: B. What's your telephone-number? — M.: I don't know; I haven't memorized it yet. — B. Well, can't you tell me at least approximately.

31. This saying is often ascribed to Ferdinand de Saussure, but actually had its origin in several dicta of Antoine Meillet, e.g. (1903: ch. 1): 'Chaque langue forme un système dont les parties sont unies les unes aux autres'; cf. Szemerényi (1980).

32. As in the work of the 'Copenhagen school', especially the late Louis Hjelmslev.

33. Cf. the references given in Hall (1984:29, fn. 13).

34. As I pointed out in Hall (1963), in a naïve attempt to bridge the gap between what seemed to me at the time the not inevitably irreconciliable view-points of the Tragerites and the Chomskyites.

35. Cf. Hall (1983).

36. The lower-class person would of course have said *I ain't heerd nothing*, with a normal analogical formation on *hear*. In such situations, the really ignorant persons are usually the speakers of 'correct' English.

37. In general, linguistic geographers tend to treat an isogloss as representing too sharp a boundary; cf. the remarks of S. Pop (1950:966) à propos of L. Tesnière's atlas of the Slovene dual: 'Les isoglosses ne doivent pas être considérées comme ayant un caractère absolu et tranché'.

38. Exemplified, unfortunately, in much current work in 'urban dialectology'.

39. Even, I regret to say, in the title of my own article 'Il perché del mutamento linguistico' (Hall [1963]).

40. Such random 'errors' are considerably more important, for our interpretation of every-day discourse, than they are usually thought to be (cf. Hockett [1967]).

41. Cf. the diagram of the gradually developing divergence between Demotic and Coptic, originated by Sethe (1925:316) and adapted to the relation between Latin and the gradually evolving Romance languages by Pulgram (1950:461) and reproduced in Hall (1974:72).

42. This point has been most fully developed by Martinet (1955) and his followers.

43. For the parallelism between the over-all development of the Indo-European languages and that of the Romance tongues, cf. Meillet (1925).

44. Cf. the golden words of LePage (1971:430): 'All grammar is an analysis of past events; we apply it to the future at our peril'.

45. For instance, in such sixteenth-century Italian theorists as Girolamo Muzio and Benedetto Varchi; cf. Hall (1936:100-101).

46. Even down to the time of Rasmus Rask, Franz Bopp, and August Schleicher (cf. Robins [1967:173-184]).

47. In his *Progress in language* (1894).

48. In Sapir (1921: ch. 7); cf. also the observations of Malkiel (1976/77).

49. As exemplified most recently, for example, in Wescott (198); Gans (1981); and the articles contained in de Grolier (ed.) (1983).

50. Cf. the thorough discussion of the German *Junggrammatiker* in Jankowsky (1972), and my review thereof in Hall (1977).

51. E.g. Johannes Schmidt and Hugo Schuchardt in the nineteenth century, and such scholars as M. G. Bàrtoli in the twentieth (cf. Hall [1947]).

52. As I pointed out in Hall (1958).

53. Not only naïve speakers, but even highly intellectual scholars occasionally commit malapropisms, as when a certain famous Indo-Europeanist spoke of 'hypothecating' various forms for the proto-language.

54. I have recently had to be very much on my guard against repeating, out of unreflecting habit, what was originally intended as a (rather feeble) witticism, referring to a certain London railway-station as *St. Pancreas* instead of *St. Pancras*.

55. There is a legend to the effect that the present-day use of the voiceless interdental fricative /θ/ in standard Castilian originated in a seventeenth-century king's speech-defect, using /θ/ instead of /ȼ/ [t^s], which was then imitated by his courtiers in an effort to save him embarrassment, and then spread to other strata of society in imitation of the courtiers. I do not find this hard to believe, in view of the possibility of individual influence on language-change, through prestige.

56. We must, of course, distinguish between the origin of a sound-change, in one person's or a small group's usage, which is the source of regularity, as opposed to its spread, in the course of which individual words may receive the new development and others not. Failure to make this distinction has vitiated much discussion of the 'regularist' hypothesis in sound-change.

56. Cf. Price and Chissick (eds.) (1977).

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INAUGURAL LECTURE

GRAMMAR AND MEANING
THE CASE OF NUMBER IN ENGLISH

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Introduction

One of the most intriguing, and disquieting, characteristics of linguistics today is the remarkable polarization of attitude it gives rise to. On the one hand we find the seriousness with which linguists regard their discipline, and in this they resemble the adepts of any other field of academic study. On the other hand, few people outside of linguistics share this attitude, and in fact many wonder just what a linguist does, or even is —a consequence of the fact that they attach little importance to his discipline. This intriguing polarization of attitude invites the question: why? When one seeks an answer, however, curiosity gives way to disquiet as we shall see first.

The reason for this singular situation can hardly be that the object of our discipline, human language, is of little importance. On the contrary, it might rather be claimed that there is a certain elevation or nobility in the object whose nature we are trying to probe. After all, without language none of the disciplines could have come into being, and in fact man's intellectual life as we know it would be non-existent. Indeed, language has been called "the pre-science of all science" (Guillaume 1984: 146) to emphasize its importance for human thought and to suggest that without that world view, that "theory" of the universe, provided by our mother tongue science could not have developed. This preeminent position of human language amply justifies the seriousness with which linguists regard their discipline but it renders even more perplexing the attitude of non-linguists.

The Essential Relationship

What, then, can account for the rather disappointing track record of linguistics, at least in the eyes of those who are not personally involved? I would like to suggest that it is due to the fact that linguists in their theorizing have not come to grips with the fundamental problem, namely, to account for the essentially binary nature of language and that, as a consequence, they are

often felt to be concerned with what is secondary, or even trivial, in language. Let me hasten to add that I have not presumed by my own lights to assign the science of language such a task. Others have said it before me. Saussure (1955: 32), for example, said: "... la langue ... est un système de signes où il n'y a d'essentiel que l'union du sens et de l'image acoustique". Leonard Bloomfield (1966: 27) expressed it this way:

> To put it briefly, in human speech, different sounds have different meanings. To study this coordination of certain sounds with certain meanings is to study language.

Chomsky (1966: 10) evokes the same idea, though in different terms of course:

> The competence of the speaker-hearer can ideally be expressed as a system of rules that relate signals to semantic interpretations of these signals. The problem for the grammarian is to discover this system of rules.

In spite of the fact that these three linguists had quite different views of language, their three statements of principle have something in common, namely that language is binary in nature, that language necessarily involves both mental and physical constituents. In more concrete terms then, the essential thing in language is the relationship between some mental representation (or meaning) and its physical means of expression (or sign), and the moment a linguist misconstrues or loses sight of this relationship, he has misconstrued or lost sight of the reality of his object. This, I claim, is why the science of language has not fulfilled the high hopes quite justifiably placed in it: because linguists have failed to come to grips with this fundamental relationship. In order to justify this claim, I shall be led to examine several unsuccessful attempts to deal with the meaning/sign complex and this will bring us to the core of our subject: how linguistics can get back on track and carry us closer to the hidden reality of language.

One very widespread but, in my opinion, insufficient way of accounting for language usage loses sight of our fundamental relationship. This is the approach that attempts to account for usage in terms of rules, as though language were rule-governed behavior. Now it is certainly correct to say that, for example, some is used for the most part in affirmative rather than negative contexts, but many linguists stop here. Instead of seeking the reason for this aspect of usage, they consider the descriptive rule to be an explanation, as though the rule were one of the ultimate constituents of English. On the other hand, those who keep the meaning/sign relationship clearly in focus will not rest until they can explain this usage in terms of the meaning of some because any word or morpheme is used for, and only for, the meaning it can express. That is to say, we speak in order to convey some message, to express a meaning, so that the motivation for using a sign, any sign, is

the meaning it brings to the sentence. As a consequence, no linguistic analysis can be considered adequate if it fails to account for usage in terms of the meanings involved. In short, language as used by the speaker is a meaning-expressing activity, not rule-governed behavior.

Many, perhaps most, linguists would probably accept this view and so would not lose sight of the fundamental relationship. And yet this relationship is often misconstrued. Why? Why is it so difficult to account for the sign/meaning relationship? After all, since a necessary condition for communication as we know it is that a given sign be linked somehow to a given meaning, can one not simply describe the meaning a given sign expresses and say the sign occurs in discourse whenever that meaning is to be evoked? This is the approach of those who view language usage as a code, with a one-to-one relationship between a sign and its contextual meaning. Some years ago, a great deal of research based on this view was done to the end of developing a mechanism or program for translating from one language to another. Predictably, this research was not a success because of the fact that, as far as language is concerned, a sign such as a word or morpheme can have different meanings in different sentences. That is to say, our fundamental relationship, as observed in actual usage in discourse, is not like the simple one-to-one correspondence found in a code, but rather a complex one involving a sign with numerous, shifting senses.

This view of language usage as a code may appear to us naïve today. Confronted with the remarkable variety of senses a word or morpheme can express in discourse most scholars today accept polysemy as one of the facts of life, and yet few, in my opinion, have managed to deal with it in a manner consistent with what we know about language. Indeed, to my knowledge only one satisfactory approach to the crucial problem of polysemy has ever been proposed. That is, only one approach allows for various senses in usage yet maintains a one-to-one correspondence between meaning and sign as the essential basis for communication as we know it. My aim here is to outline and illustrate this approach, but first I wish to mention other approaches and the difficulties they lead to.

A large number of grammarians and linguists are content to bring out the fact of polysemy and leave it there. They will, for example, present the progressive form as expressing three or four or more "aspects of meaning" (cf. Leech 1971: 15) but they fail to show how the listener knows which one the speaker intends. That is to say, unless some consistent relationship between sign and meaning is depicted, the listener would only be able to guess at what the speaker has in mind, with the consequence that communication as we know it would be impossible.

To avoid this difficulty, some scholars propose that a word or morpheme gets its meaning from the context, that it is by juxtaposition with the other elements in the sentence that, for example,

the progressive takes on its particular nuance of meaning. This certainly corresponds to part of the listener's task, but as a general doctrine of meaning it is inadequate. Thus, to claim that "A word on its own is not meaningful; what it means depends on its context" (Mittins 1962: 1), as one grammarian put it, simply contradicts a fact of common experience, namely, that a word on its own does have some sort of meaning. Furthermore, it entails the indefensible proposition that from a set of meaningless items one can derive a meaningful context, a message. In brief, this approach is unsatisfactory because it would make communication impossible.

This sort of difficulty has led some scholars to reaffirm the one sign/one meaning idea as an indispensable basis for the use of language as a means of communication, particularly in novel situations. The problem remains, however, to accommodate this language-as-a-code approach to the facts of polysemy. One expedient resorted to is basically rather naïve: it amounts to observing the different contextual meanings of, say, the progressive and declaring that there are separate but identical signs for them. Thus, in a work I recently read the author proposes three progressives in English, all pronounced and written in exactly the same way, three homonyms. In like fashion, it has been claimed that there are two homonymic any's corresponding to the two meanings of any discerned by the linguist. Aside from the fact that this expedient simply begs the question (is it sheer coincidence that these similar contextual meanings have identical signs?), there is the problem that a listener or reader would not know which of the identical signs is being used, with the consequence that communication would simply not be possible if there were as many signs as there are contextual meanings.

Most scholars who hold to the one sign/one meaning version of the fundamental relationship as the only possible basis for communication as we know it, would not favour the multiplication of the sign as a means of accommodating polysemy. Rather, they tend to look on the various contextual meanings of a form as related to one another and therefore as deriving from a single "basic" meaning. This approach is certainly more promising than those evoked above because it is founded, not on a failure to recognize polysemy, nor on the chance occurrence of signs in a context, nor on coincidental homonymy but rather on the much more plausible principle that certain notions or meanings are seen as related in the mind of the speaker. Unfortunately, most attempts to find a single "basic" meaning for various contextual meanings are unsuccessful because grammarians generally pick out one of the contextual meanings and consider it "basic". For example, most teaching grammars consider that the present progressive expresses basically "action going on at the moment of speaking" simply because this is the most frequent nuance expressed. Again, one attempt to deal with the polysemy of the quantifier any argues that in every one of its uses, any means 'every', 'all' (cf. Savin 1974), presumably because this is the most striking of its uses. Such attempts, which are often most ingenious, fail to recognize that the relation between two contex-

tual meanings is quite different from the relation between any particular contextual meaning and the so-called "basic" meaning from which it is derived. To confuse the two by proposing one of the contextual meanings as "basic" to the others is like taking one of the symptoms of the common cold, say a sore throat, as the cause of all the others. One must rather seek the underlying condition which gives rise to all the observable symptoms, just as the linguist must seek the underlying meaning of a form, the meaning which gives rise to all its observable senses in discourse. In short, the unicity of meaning that must be postulated to make communication as we know it possible is of the order of a cause and so must be sought, not on the level of the effect, of usage in contexts, but rather on the level of the underlying condition permitting usage.

Meaning as a Potential

Since this is the turning point in these remarks, it may be worth dwelling on it for a moment. What I am suggesting is that many studies of grammar which attempt to find an underlying meaning are looking for the right thing, but they are looking for it in the wrong place. They should not seek the single "basic" meaning from which the contextual senses can be derived among the derived senses but rather on the prior level of a condition permitting all the derived senses. This is a meaning of a different order which the terms "basic" and "underlying" evoke metaphorically but since these two terms are open to misinterpretation, it is preferable to designate it properly as the potential meaning. Inherent in the notion of "potential" is a conditioning relationship with regard to the derived contextual senses, or actual meanings, in discourse. I am, then, suggesting that only on the level of the potential meaning can one find the one-to-one correspondence between meaning and sign which both materializes the essentially binary nature of language and provides a necessary condition for the use of language in communication as we know it. (I might also add that the potential/actual view of meaning provides a framework for reflecting on the vexed question of language acquisition without begging the question by appealing to some innate grammar.)

This, then, is the theoretical stand I wish to take: that only by postulating the existence of a prior potential meaning can we satisfactorily account for the various observed senses of a form in discourse. Rather than develop some of the implications of this stand – they extend to our conception of the very nature of human language – I would prefer at this point to give an example of what I am talking about, and this, not merely to illustrate what sort of entity is being postulated but also to demonstrate how, starting from observations of usage, and guided by a single postulate, one can reconstruct this theoretical entity making use of a method which is, in essentials, that of comparative grammar (cf. Valin 1964). I have chosen grammatical number in English as the example partly because a far more complete account than can be given here is available in print (cf. Hirtle 1982), partly because it is a

problem of considerable intrinsic interest which has been almost completely neglected by linguists and grammarians, but mainly because it provides the least complicated example analyzed to date.

Number in English

I have just mentioned that number is a neglected problem in English and the reason for this is not far to seek. Everyone knows that the Ø form of a substantive signifies 'one' 'singular' whereas the -s form (and a few irregular formations like teeth and children) signifies 'more than one', 'plural'. What more is there to say? Most grammar books fail to recognize the polysemy of the two endings and so overlook a very rich and exciting field of usage which appears to be developing rapidly.

Discerning the Potential Meaning

Let us begin with zero ending. By far its most obvious sense is 'one', 'singular' but this should not mesmerize us to the point that we do not recognize other senses. In fact, many grammars do point out that in a number of cases zero ending expresses 'more than one': several elk, many people, two aspirin. To my knowledge, however, no grammar raises the obvious question: how can one sign express such different contextual meanings as 'one' and 'more than one'? Once, however, our attention is focused on the essential relationship between sign and meaning, this question is posed and a second question immediately arises: can this sign express any other senses? The following examples do suggest a third sense:

> Elk have a strong characteristic smell.
> People are funny.
> Aspirin have few side effects.

The substantives here are certainly not 'singular' in sense, nor can they be paraphrased by 'more than one'. They are in fact universal in extensity, expressing what some grammarians call a 'generic' sense.

This gives us three contextual meanings of zero ending. Are there any more? No grammarian of English has failed to point out the sense of 'mass' or 'non-count' in examples like:

> There is butter on the table.

However, it took a Jespersen (1954: II, 72-73) to bring out the difficulty they pose: "Here such notions as singular and plural are strictly speaking inapplicable."

Here, then, is the problem for zero ending: how to find a single, potential meaning which can give rise to the usual 'singular'

sense, the frequent 'plural' sense, the occasional 'generic' sense and the 'non-count' or 'mass' sense which appears to have no relationship with the other senses.

If we turn now to the -s ending, a rapid survey will reveal a somewhat similar problem. Besides the usual 'plural' sense, we find a frequent 'generic' use, as in:

Dogs are vigilant.
He likes games.

Although few grammars mention it, there is a very curious use which adds a third sense to the list:

a strategical crossroads
a picnic grounds
a barracks.

Unlikely though it may seem at first sight, the only possible interpretation to be given here is that of 'singular'. And this use appears to be on the increase. Here are some examples picked up in conversation or on television:

... hardly a desirable impression for an airlines to present

... a terrific end to what has been a terrific Olympic trials

You're having a good playoffs, Gregg.

An examination of -s morpheme would not be complete without a mention of its well-known but infrequent use with 'mass' nouns, as in:

The Snows of Kilimanjaro
The waters of the bay
The sands of the desert.

More uses might be brought in here, but this will suffice to bring into focus the polysemy of -s and pose the problem of its potential meaning.

Starting from data such as these, one may well wonder how to imagine, to reconstruct, a single potential meaning for each morpheme which could be actualized so as to give rise to all the observed senses in discourse. Fortunately, a means for dealing with such cases of polysemy has been found, a means whereby a single underlying condition can give rise to a number of different consequences. Originally proposed by Guillaume (cf. 1984: 133), this condition is provided by regarding potential meaning operationally, that is by regarding it as essentially a matter of process or movement. Any movement is one, but it can give rise to different results if intercepted at different points of its development. That is, by adopting an operational view of meaning we can postulate

that the potential meaning of, say, zero ending is the possibility of carrying out a certain subconscious mental process. And depending upon whether the thinker/speaker intercepts this process early in its course or late, the morpheme will have one sense or another. Basically Guillaume is trying to describe how we think the meaning of a morpheme in order to explain its different uses. And if we accept that usage is meaning-motivated, that any sign is used for the meaning it expresses, then it is difficult to imagine another way of proceeding.

The crucial point here, then, is an operational view of meaning. Now we tend to regard meaning as static since this is the way it strikes our consciousness in discourse, and so the idea of meaning as movement, as a mental process, is somewhat strange for many people. A glance at how this idea can help us explain the different senses of zero ending will perhaps make this idea more comprehensible.

We can start with the notion of 'number', which is clearly common to three of the senses of zero ending. Furthermore, between these three senses, – 'all', 'more than one', 'one' – there is a consistent relationship of decreasing number. (We shall see later why a relation of decreasing number is proposed for zero ending.) These two facts suggest the form of movement that can be postulated for zero ending: a movement of decreasing number. This can be depicted schematically as in Figure 1:

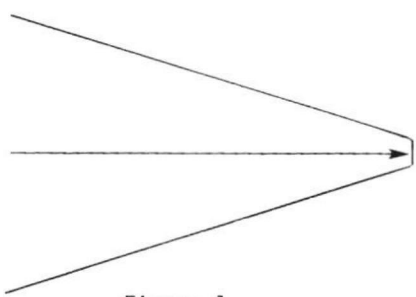


Figure 1

If the movement is intercepted at its final instant, it will generate a representation of minimal number, that is, of 'singular', as in:

I took an <u>aspirin</u>.

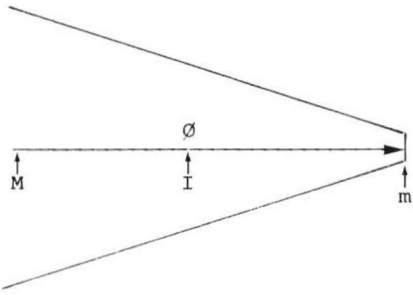
If the movement is intercepted earlier, at some instant before its end, it will generate the representation of a greater number, of a 'more than one' sense, as in:

I took three <u>aspirin</u>.
<u>Aspirin</u> were found all over the floor.

If, finally, the movement is intercepted just as it begins, at its very earliest instant, it will generate the representation of a total or maximum number with the sense of 'all' as in:

Aspirin have few side effects.

These three interceptions – at the beginning, somewhere in the middle and at the end – can be depicted as in Figure 2:



M = Maximum ('generic', 'all')
I = Intermediate ('more than one')
m = minimum ('one')

Figure 2

One important point about this correspondence should be emphasized. On the one hand, the only possible interceptions are those indicated: at the beginning, anywhere in the middle and at the end. On the other hand, the only possible numerical senses of zero ending are maximum number ('all'), an intermediate number ('more than one') and minimum number ('one'). That is, all possible cases of representing number are provided for, and this in itself is a significant achievement because it constitutes a necessary basis for any theory of grammatical number.

This, however, is not all that is required of a theory of zero ending. Many problems of number remain to be accounted for – that of 'mass' nouns, for example. Or the difference between a plural expressed by zero and that expressed by -s (three aspirin vs three aspirins) and the reason why most substantives do not occur with a zero plural. Even more intriguing is the fact that the names of many wild animals are found in both plurals (three elephants/three elephant) whereas substantives denoting domestic animals occur in -s plural only. Such apparent inconsistencies of usage can be accounted for if we compare the movement of zero ending with that of -s.

We have proposed that the potential meaning of zero ending is the possibility of a movement from maximum to minimum numbers.

The potential meaning of -s ending is just the reverse: a movement from an initial position, to which corresponds a representation of minimum number ('singular'), through intermediate positions ('plural') to a position corresponding to maximum number ('generic'). This can be depicted as in Figure 3:

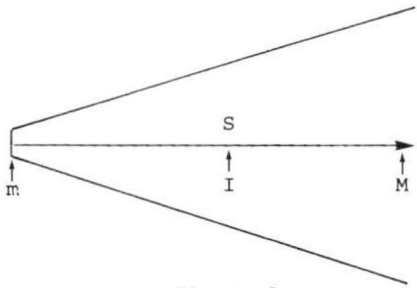


Figure 3

Examples of these uses of -s are:

He stopped at a crossroads.	= m (minimum)
The next three crossroads have no traffic lights.	= I (Intermediate)
Crossroads should be well lighted.	= M (Maximum)

We can get a view of the system, the representational mechanism of grammatical number in English, by juxtaposing the two movements, as in Figure 4:

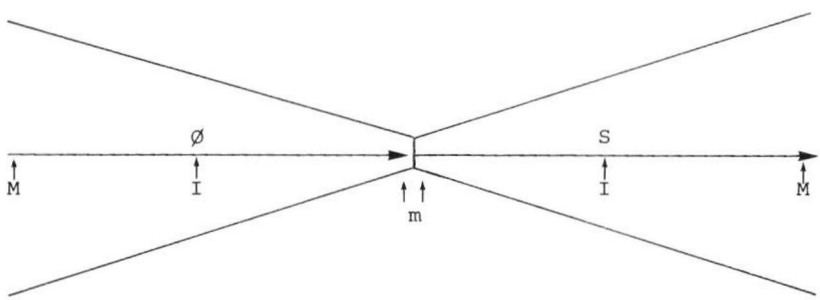


Figure 4

This is a system because it is basically one operation made up of two successive movements, the first contractive, the second expansive in form. And it is the opposition between the two, the second being the reverse of the first, which gives the key to the differences observed in the use of the two endings. Because the -s

movement tends toward more and more, a maximum, whatever representations it gives rise to are characterized by multiplicity; because the zero movement tends toward less and less, a minimum, its representations are all characterized by unicity. That is to say, where -s evokes quantity as discontinuate, zero evokes it as continuate. Indeed, more than one scholar has pointed out that the system of number is not merely a question of number, of singular and plural, but rather a discussion of the far more general question of quantity. That is to say, the system permits the thinker/speaker to represent the quantity involved in what the substantive evokes lexically, and to represent this space in one of its two possible versions, continuate or discontinuate. Of course the most frequent expression of something seen as continuate is the singular, whereas a discontinuate view of something is most frequently expressed as a plural, but these numerical senses remain particular cases of a far more general representational system. Indeed, we have seen that both zero and -s can express other senses, and it is time to examine, from the general point of view of quantity, some of the problems they raise, keeping in mind both the continuate/ discontinuate distinction and the quantitative variation of each.

Problems of Usage

The first such problem is to explain how one can obtain a plural within the field of the continuate. A curious restriction on this use in the case of wild animals gives a clue to the answer. It has often been pointed out that uses such as three elephant, many duck and the like are typical of hunters, zoologists, park wardens or other cognoscenti, whereas the common uninitiated speaker would use -s forms here. Now cognoscenti have greater experience and awareness of the species to which the individual animals belong and of which they are specimens. It seems then that when these speakers evoke such animals, the notion of the species provides a sort of backdrop for the individuals, which then appear as manifestations of the continuate unity. As a consequence, their behavior is evoked as typical of, or animated by, the species. Support for this explanation is found in the fact that this use does not occur with substantives denoting domestic animals; after all, to the extent that they have been domesticated, such animals have been cut off from species-animated behaviour.

A somewhat analogous situation arises with names of human groups. We often find expressions like 2000 Eskimo, a number of Micmac, where the zero plural is used for a tribe or ethnic group, as though this were an inherent element of the nature of the individuals thus designated and so provides a sort of backdrop against which they stand out. Where the link between the containing whole and the individual is not felt to be so strong, however, only -s plural is found, as in many Canadians, a few Americans.

Thus, one gets the impression that where the -s plural evokes a set of individuals with some common characteristic as distinct entities, the zero plural presents them as specimens or subdivisions of a greater entity. This comes out with particular clarity in a small number of words that name a group, for example: a crew, a faculty. -s plurals like three crews or several faculties call to mind a set of individual entities. However in common expressions like three crew or several faculty the zero plural brings out the individuals as members of a greater entity by dividing the whole into its constituent parts.

A clear example of the same phenomenon is found with expressions of measure. When we speak of a twelve-foot ladder or a six-mile run the head-word ladder or run provides the entity, the continuate whole which is to be measured; the zero form divides it into the appropriate number of units of measurement. Again, one gets the impression of plurality within a continuate or whole.

Somewhat similar are cases like a four-door car or a five-bedroom house, which evoke not a measurement but a model or type. As with the substantives denoting ethnicity above, we get the impression of a characteristic determining the very nature of the object, whereas an expression like a many-windowed house (cf. Hirtle 1969) suggests an accidental characteristic. These, however, are areas of usage which require much closer examination before anything definite can be advanced. Indeed, all uses of the zero plural require much more extensive observation and further reflexion because there is, to my knowledge, no full-fledged study of this problem in contemporary English, surely a remarkable lacune for the most studied language in the world.

One of the most interesting manifestations of the difference between the two plurals is provided by the pair three aspirins/ three aspirin. The -s plural evokes three tablets which contain aspirin; the zero plural evokes the chemical as contained in three tablets. The distinction, which is real though subtle, is that between a plurality of entities containing the same substance and a chemical substance in the form of distinct entities. It is, if you like, six of one, half a dozen of the other because in the final result it amounts to saying the same thing but in getting to that result involves very different processes: multiplication in one case, division in the other.

This should suffice to give some idea of what lies behind this very remarkable characteristic of English — the fact that many substantives have two plurals. Ultimately, it seems to come down to the deriving of a plural either by subdivision of a greater continuate or by multiplication of a minimal unit to form a discontinuate. Equally remarkable is the fact that we can observe an -s singular in a number of words — a growing number if our observations are correct. However, it will not be possible to explore this use here (cf. Hirtle 1982 for details), nor a number of other

uses which deserve close attention: tool names like plier/pliers, garment names like trouser/trousers, and other curious uses of -s (see Wickens forthcoming); cattle which has neither -s plural, nor a singular; cases like zero grams; etc., etc. Before leaving the illustrative example of number and returning to more general considerations, however, a brief comment on 'mass' nouns is called for.

As mentioned above, Jespersen considers that 'mass' nouns cannot be considered to be either singular or plural. Because the traditional view of the system of number offers no other alternative, this observation is, to say the least, disturbing. The difficulty disappears, however, if we adopt the point of view outlined above, namely that the system of number is fundamentally a discussion of quantity, of continuate vs discontinuate representations of space wherein singular and plural, important though they may be, are particular cases. In the light of the system proposed here, 'mass' nouns which are found only with zero ending can arise only in the field of the continuate. Indeed, the most striking impression of such substantives on the level of usage is that of homogeneous, undivided space. That is to say, they are formed in the first movement of the system where continuate representations of space are obtained. At what point in this movement? Certainly not at the final instant where a minimal space is defined, a singular, because insofar as these are 'mass' nouns, their lexemes refuse any such 'unit' delimitation. Quantity-wise, a use like:

There's butter on the table.

evokes an indeterminate amount, suggesting an intermediate interception of the zero movement. This interpretation is confirmed by the fact that we also find 'mass' nouns with a 'generic' sense, as in:

Butter is made from cream.

This sense, as we have seen, arises from intercepting the movement at its first instant, before the contractive movement has reduced the substantive's extensity. That is to say, the lexeme of a 'mass' noun can be represented either at a maximum or at some intermediate point, but not at a minimum insofar as quantity is concerned.

What, then, distinguishes such substantives from the internal plural we have been examining? After all, both usually involve an intermediate interception of the zero movement. The distinction between 'mass' and 'count' nouns corresponds to two ways of representing their lexical content, the lexeme. As such it is a lexical distinction, not a grammatical one, though it does have consequences on the grammatical form, as we have just seen.

Considering this a lexical distinction coincides with the view of most grammarians and offers a basis for understanding why, as some scholars have pointed out, the lexeme of theoretically any

substantive in English can be expressed as either 'mass' or 'count'. And so we find expressions like a lot of car for your money or There's not enough telephone booth here for me which have a striking expressive effect because car and booth, which are usually prehended in a 'count' sense, are here used in a 'mass' sense. Conversely, if we speak of different butters we get the 'count' sense of 'different types or brands of butter'. Even more striking is the expressive effect where the lexeme does not lend itself readily to a discontinuate representation and yet the substantive is found with the -s ending: The Snows of Kilimanjaro, the waters of the bay. Finally, we can now account for the distinctions illustrated in the following set of examples:

Zero ending ('continuate')

'mass' : Aspirin is an analgesic. ('Maximum')

'count': Aspirin have few side effects. ('Maximum')

'mass' : Is there much aspirin in this medication? ('Intermediate')

'count': I took three aspirin this morning. ('Intermediate')

'count': I took an aspirin this morning. ('minimum')

-s ending ('discontinuate')

'count': These aspirins are for adults. ('Intermediate')

'count': Aspirins should be kept out of the reach of children. ('Maximum')

Conclusion

It is now time to get back to the important point all this discussion of number was intended to illustrate, namely that the way out of the apparent impasse of polysemy is to discern the potential meaning of a form, the meaning underlying and giving rise to its various actual meanings in discourse. The potential meaning of a grammatical morpheme can be reconstructed if, with Guillaume, we make the radically simple (and eminently twentieth-century) postulate that it is operational in nature, that it corresponds to the mental process required to produce the observable senses found in discourse. By adopting this operative view, we can, as shown above, both postulate a unique meaning as the mental counterpart of the sign and account for the various senses of the sign in usage. That is to say, this approach permits us to establish one-to-one correspondence between sign and meaning, the *sine qua non* for communication as we know it, while respecting the facts of polysemy because it postulates that any act of language is a process of actualizing the potential provided by our tongue in the infinitely varied contexts of discourse.

Judging by results obtained so far, Guillaume's "operational grammar" as it might be called – "everything in tongue, in fact, is a process" (1984:133) – provides a method of analysis which can be applied to most any problem of systemic meanings. As such, this method is of considerable interest to the linguist since it permits him to account for usage in terms of meaning and thereby come to grips with the essentially binary nature of language – in fact not only come to grips with it, but throw light on it by showing that meaning and sign have a univocal relationship as a permanent potential within the system in tongue but a variable relationship in the ever-changing actual uses of discourse.

All this brings us back to our original concern about the polarization of attitudes with regard to linguistics, and raises the following question: can this new type of analysis help to improve the public image of linguistics? In the ESL classroom, teaching the use of a grammatical form by getting students to appreciate its potential meaning has proved both effective and stimulating, especially at intermediate and advanced levels. And in the field of translation, comparative systematics can make a real contribution, according to Garnier (1985), who makes a comparison of the verb systems of French and English. As more grammatical problems are elucidated, further contributions to such practical fields will perhaps give our discipline more credibility in the eyes of the non-specialist.

However it is not by contributing to the solution of practical problems that linguistics will reach its full stature and merit the esteem of outsiders. This can be achieved only by showing language to be admirable in itself – by showing English speakers that English is a fitting object of wonder, that it is, in fact, man's most admirable creation. (The same applies to French for francophones, Spanish for hispanophones, and so on.) This means giving our graduate students and our undergraduate students and to some degree even our high school students a share in that sense of wonder which any linguist – in fact any man of science – should feel when contemplating the object of his science. And so my whole argument comes to this: language is "a mechanism commuting what has been thought into something said" (Guillaume 1960: January 28). Therein lies the whole purpose of language as a tool of human thought. It is precisely this extraordinary mechanism we have developed for representing and expressing our individual experience that can most readily awaken a sense of wonder. However, it is only to the extent that we as linguists have managed to understand it that we can bring others to appreciate the marvel of human language.

I should like to finish with an example because it is always with the observable reality of usage that our reflexions on language must begin, and end. I hope you will agree that the tongue which permits the following use is a wonderful construction.

BUSINESS

Hey America, Coke Are It!

In a case that is sure to become a marketing classic, a public outcry forces the return of a national symbol.

Welcome, students, to Pop Economics 101. Today's topic is the marketing maneuver of the century, the withdrawal and subsequent reintroduction of "original" Coca-Cola. Was it madness or genius? Would someone like to present the case?

Professor, the Coca-Cola Co. had a problem. The $25 billion pop market was flat. Brand Coke, while still the leader, was losing market share. Pepsi-Cola, meanwhile, with its "Pepsi generation" campaigns, was strong in the youth

RON SHERMAN

Coke's new team: Will both fit on the shelf?

cohort. With aging baby boomers increasingly concerned about their weight and turning to nonsugar drinks, most growth in the sugar segment was expected to come from the teen drinkers. Coke needed to increase its appeal to the young.

Nicely done. I like the way you toss that jargon around. What were Coke's options? Let's see some different hands.

Coke decided to court teen-agers by sweetening the recipe and calling it "new"

letting anyone know. "They could have
lowed the classic pattern by slipp
markets and talking with c
ward," says Jerry Mc
tor of Ogilvy
"Maxwell
time,
produc

NEWSWEEK
July 22, 1985
p. 40

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Coke off th
considered, ano
formula drink in circulation under the name Coke 100 (Coke's centennial year is 1986) or "original" Coke.

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the company con-
ed, plans to keep the old-

But the company elected the most dramatic approach. Was corporate culture a factor?

Quite possibly. Since becomin
in 1981, Roberto C. Goizue
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then Cherry Coke. "H
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INVITED LECTURE

SEMANTIC BASES OF LINGUISTIC DESCRIPTION
(MEANING-TEXT LINGUISTIC THEORY)

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We use language, in the first place, to EXPRESS MEANINGS (and to communicate, of course; but linguistic$_1$[1] communication boils down to an exchange of meanings expressed in and extracted from linguistic$_1$ messages). This is an obvious truth or, rather, a commonplace that no one in the linguistic$_2$ profession has ever tried to call in question. All linguistic$_2$ schools include in their respective credos strong statements concerning the crucial role of meaning and its expression in human language and, consequently, in linguistics. Thus half a century ago Leonard Bloomfield wrote: "In human speech, different sounds have different meanings. To study this coordination of certain sounds with certain meanings is to study language" (1933: 27). More recently, the same tenet has been vigorously restated, by (among others) Noam Chomsky: "A generative grammar ... is a system of rules that relate signals to semantic interpretations of these signals" (1966: 12); "The grammar of a language ... establishes a certain relation between sound and meaning" (1968: 116); etc. For the last ten years general interest in meaning and in the linguistic$_2$ discipline dealing with meaning, i.e. semantics, has witnessed considerable growth.

Nevertheless, semantics today still remains an underdeveloped field; meaning, which is *de jure* recognized as an important element of language, still is *de facto* if not ignored, then frequently avoided or at least not dealt with as directly and systematically as it should. Let us mention, for instance, Testen et al. 1984 - a volume called *Lexical Semantics* and representing one of the most recent publications in the field. The volume contains many interesting papers, is full of astute remarks and insightful discussions of different semantic problems - but, curiously enough, in spite of its title, it does not offer descriptions, or at least, attempts at descriptions, of actual lexical meanings. This is quite typical of modern linguistics' approach to semantics: firstly, most linguists concentrate on abstract, logically-tasting questions (quantification, logical connectives, referentiality, pragmatic functions of discourse, etc.), while consistently shunning the description of genuine linguistic$_1$ meanings, lexical or grammatical; secondly, to the best of my knowledge, there is - in the mainstream of modern linguistics - no integrated theory of language that would consistently proceed from meaning. (However, the work of A. Wierzbicka proposes, develops and substantiates such a theory: cf. below, p. 50.) To discuss the reasons for this state

of affairs would be out of place; suffice it to state that it justifies our expounding here a different approach to natural language, namely - the Meaning-Text theory.

The Meaning-Text theory (= MTT) is not simply another of the *n* linguistic$_2$ theories, which proliferate to such an extent nowadays that there are almost as many theories as there are practicing linguists. The MTT is really different in that it puts quite a new emphasis on linguistic$_1$ meaning, taking it as a cornerstone of language description as a whole; accordingly, semantics is declared and, most importantly, actually treated as the central linguistic$_2$ discipline (which, among other things, underlies syntax and morphology).

The Meaning-Text theory is by no means a novelty. It was launched in 1965, in Moscow, by A. Zholkovsky (now with the University of Southern California) and this writer: Žolkovskij and Mel'čuk 1965. Later, we were joined by Ju.D. Apresjan; since that time, the MTT has been developing over the past 20 years (see Mel'čuk 1981 and Nakhimovsky 1983). However, the MTT still lacks an easily available and sufficiently detailed presentation in English, a gap which this paper tries to fill, at least in part, by outlining the two following topics:

I. General structure of the MTT (with special attention to its semantic chapter).

II. A new type of monolingual dictionary, or lexicon, which - according to the MTT - constitutes the central part of the semantic component of any full-fledged linguistic$_1$ model.

The character of our exposition forces us to ban references, including the most relevant ones. (Only a few are quoted, where they were judged necessary in order to identify the background of the MTT.)

I
Outline of the Meaning-Text Theory

Main Postulates and General Characteristics. The basic idea underlying the Meaning-Text theory is as follows. Any speech act is believed to consist of THREE major components:

(a) A CONTENT to be communicated by linguistic$_1$ signals; it will be called meaning.

(b) A complex SIGNAL, or SIGNALS (observable physical phenomena), used to communicate the content in question; this signal will be called text.

(c) A MAPPING, or correspondence between the meaning and the text.

We will shortly make the concepts of meaning and text more precise, but before we do so we need to emphasize the following three important (although quite trivial and well-known) points concerning our tripartite division of a speech act.

First, we presuppose the discrete character of both meanings and texts. That is, we postulate that we can distinguish meanings

and count them; likewise for texts. Meanings and, *mutatis mutandis*, texts are for us formal object specifiable by a logical device (for instance, by a generative grammar). This is more or less accepted with respect to texts but seems to be rather unusual as applied to meanings.

Second, the set of possible speech acts is open: there is an infinite number of meanings and texts in every natural language. However, the mapping between meanings and texts is finite, i.e. it can be fully represented by a finite number of correspondence rules. (Although finite, this number is very large.) This is the case since an arbitrary meaning, as well as an arbitrary text, can be, generally speaking, broken down into simpler meanings, *viz.* texts, so that ultimate correspondences can be established between elementary meanings and elementary texts, the number of these entities being finite.

Third, there is no one-to-one correspondence between meanings and texts: one meaning can be expressed by quite a few texts (synonymy), and a text can express several meanings (homonymy/polysemy, or ambiguity).

The above-stated may be symbolized as in (1), which is the main postulate of the Meaning-Text theory:

Postulate 1

$$(1)\quad \{\text{MEANING}_i\} \overset{\text{language}}{\Longleftrightarrow} \{\text{TEXT}_j\} \mid 0 < i,j < \infty$$

In the MTT, then, a natural language is viewed as a many-to-many mapping between an infinite set of meanings and an infinite set of texts.

Let it be emphasized and re-emphasized that the words *meaning* and *text* are to be taken, within the present framework, as technical terms, free of the many connotations they have in every-day English or in other terminological systems. Thus, as far as meaning is concerned, three important properties of our approach must be constantly borne in mind.

(i) We deal only with strictly linguistic$_1$ meaning, i.e. with the information which can be extracted from an utterance solely on the basis of purely linguistic$_1$ knowledge, without any reference to the context and/or extralinguistic environment (roughly, without any encyclopedic knowledge about the universe). Our "meaning" is the shallowest, absolutely literal meaning of utterances. Suppose a girl on a date says to her shy partner, "Oh, I'm cold!" - in order to incite him to embrace her; for the MTT, the meaning of her utterance is still 'I am cold' and by no means 'Go ahead and embrace me!' When I tell you that John has applied for a scholarship and you react by asking me, "What do you mean?", you are after quite a different meaning from what the MTT tries to describe. A meaning in the MTT is simply the invariant of a set of all utterances that are paraphrases of each other; or, to put it differently, meaning IS THE CANONICAL INVARIANT OF SYNONYMOUS UTTERANCES (see below). Therefore, such things as truth, incoherence or absurdity are of no relevance to us: these properties concern the relationship between linguistic$_1$ meaning and something else (= the universe), while the task of the MTT is precisely to avoid discus-

sing anything that is beyond language.

(ii) Meaning is taken to be directly accessible to speakers - much like the sounds of their language. This is not to be construed as implying that any speaker is able to correctly analyze or explain any given meaning: such is by no means the case. But every speaker knows (though perhaps subconsciously) what he wants to say, even if he does not understand the deeper "meaning" of his words (this last circumstance should not bother us). Therefore meaning is open to direct introspection; for a trained linguist describing his mother tongue meaning belongs to the data.

(iii) Although we talk of meaning, the MTT deals, in actual fact, with formal representations of meanings, called Sem(antic) R(epresentations). Meanings do have an objective existence of their own - as certain neurophysiological events in the speaker's brain. But once again, this is of no relevance for us. When we write $\{\text{MEANING}_i\}$, we mean $\{\text{SemR}_i\}$. These representations, invented and developed by the linguist, are our only semantic reality - within the limits of the MTT, of course.

Texts possess three similar properties as well.

(i') The term *text* should by no means be understood as 'coherent text' or 'discourse', i.e. in the sense of the so-called text grammar. Our text is any linguistically$_1$ valid segment of speech; it can be the signifier (= Lat. *signans*, Fr. *signifiant*) of a morph, a lexeme, a phrase etc., including whole volumes.

(ii') Texts are directly accessible to the speaker, in the sense that he is able to tell a well-formed text in his language from an ill-formed or questionable one.

(iii') We deal with representations of texts only, not with actual texts (which consist of physical phenomena). Saying $\{\text{TEXT}_i\}$, we mean $\{\text{Phon(etic) R(epresentation)}_j\}$, and only PhonR's are the object of our study.

Following the statements (i)-(iii) and (i')-(iii'), we can rewrite (1) as a more precise formulation, namely (2):

$$(2) \quad \{\text{SemR}_i\} \overset{\text{language}}{\Longleftrightarrow} \{\text{PhonR}_j\} \mid 0 < i,j < \infty$$

What has been said so far allows us to draw an important conclusion. From (2) it follows that the first and foremost task of linguistics should be to develop formal languages for the representation of meanings and texts. In slightly different words, the first thing we need in order to talk about natural language in a scientific way - so that all our statements are explicit and unambiguous - is a semantic transcription and a phonetic/phonemic transcription. Until we can formally present meanings and texts of a natural language we cannot, strictly speaking, discuss it.

Now, phonetic/phonemic transcriptions are readily available; where they are not, methods for developing them are familiar, and necessary skills and know-how are at hand. However, with meanings the situation is different — quite simply, it is disastrous. No serious efforts have been made in mainstream linguistics to develop a semantic transcriptions, for instance, at least one artificial semantic (meta)language for at least one natural language. As far as we know, no proposals to this effect have even been advanced in

major linguistic$_2$ schools. There are, to be sure, several developments that seem to contradict the last statement: take, for example, the insightful and promising work of A. Wierzbicka (1972 and 1980, to name only two of her many pioneering studies). But in spite of its interest and availability, Wierzbicka's research (as well as a number of similar attempts) remains little known and, in a sense, marginal. Modern linguistics, as a whole, has not yet made semantic language its main concern. In sharp contrast, the MTT lays heavy emphasis on meaning representation, i.e. on the SemR and, therefore, on a semantic language. In our opinion, such a language is a *sine qua non* of today's science of language. Later on, we will discuss the semantic language, i.e. the language of SemR used in the MTT, more in detail.

Now let us make the next important point. While meanings and texts (of a language) are immediately accessible to the linguist, rules that correlate them (i.e., the mapping "$\Longleftrightarrow$" in (1) and (2)) are not. Thus we linguists face the classical "black box" situation: we are in front of a running device (= natural language) whose inputs and outputs are perceptible and controllable but whose inner structure, i.e. circuits linking inputs with outputs, is totally hidden from us. Linguistic$_1$ rules mapping meanings onto texts and vice versa are electronically/chemically encoded in the speaker's brain, yet we cannot open skulls to find out about them. The only option we have can be expressed by the following:

Postulate 2

(3) A natural language, viewed as a many-to-many mapping between two infinite sets (that of meanings and that of texts), can be described only by a CYBERNETICAL, or FUNCTIONAL, MODEL.

A functional model of a device (phenomenon, event) X is a logical device, or a finite set of formal rules, which simulates as closely as possible the behavior of X. In our case, X is human language, and therefore our model should simulate the linguistic$_1$ behavior of humans - in other words, it should establish correspondences between meanings and texts. It is such models that we call MEANING-TEXT MODELS (MTM). Strictly speaking, an MTM for language $\mathcal{L}$ is a system of formal rules which associates with a given SemR of $\mathcal{L}$ all the PhonR'x that, in the judgment of $\mathcal{L}$'s speakers, can carry the corresponding meaning, and vice versa, which associates with a given PhonR of $\mathcal{L}$ all the possible SemR's, i.e. all meanings that this text can have. Thus the second task of linguistics should be to develop meaning-text models of languages. (Of course, this task is closely related to the first one, that of developing formal languages for linguistic$_2$ representations, in the first place - for the SemR.) We can say that the meaning-text theory is a theory for building MTM's.

Note that a complete meaning-text model should be a "dynamic" device in the sense that for a given SemR, it should actually produce the set of corresponding PhonR's. However, it seems natural to distinguish, within an MTM, two submodels: 1) the system of purely linguistic$_1$ rules which specify the correspondence between

meanings and texts and 2) the system of procedural rules which specify the process leading from a SemR to the PhonR's (or vice versa) - based on linguistic$_1$ rules, i.e. on the first system. The second system is by no means specific to linguistics; it includes rules that, using factual knowledge supplied by the first system, compute the best way (or one of the best possible ways) to construct the neccessary PhonR for a given SemR (and to construct the necessary SemR for a given PhonR). The same type of procedural rules is needed whenever stored knowledge has to be used for the solution of any problem. Therefore, in all our deliberations, we make abstraction from the second system of rules. Thus an MTM is considered and presented only in its strictly linguistic$_{1/2}$ (= "static") aspects. This means, among other things, that it appears as a STATIC system of correspondences between elementary meanings and elementary texts, to the complete exclusion of all elements of procedure. Two important remarks are needed in this regard.

First, an MTM is by no means a generative or, for that matter, transformational device: it is equative (or, if you like, translative). It does not seek to generate (= enumerate, specify) the set of all and only grammatical or meaningful texts, nor does it transform certain linguistic$_1$ entities into other entities. It simply states which SemR's match which PhonR's in accordance with native speakers' intuition.

Second, an MTM does not admit linear order as a formal means among its tools. To be sure, linear order is an important expressive means of natural languages and, as such, it has to be accounted for in the rules and the representations used by the model. However, linguistic$_1$ order should not be reflected simply by ordering the elements of the MTM. Thus MTM rules should be unordered, and all of relevant information about language should be explicitly represented by symbols and configurations thereof. Likewise, linear order is never admitted to express any linguistic$_1$ relations in the semantic or syntactic representations of utterances. Once again, all relations should be denoted by appropriate symbols. (Cf. Sanders 1972.)

We have mentioned above that the correspondence between meanings and texts is a many-to-many one. For a fairly complex meaning, hundreds of thousands of (nearly) synonymous texts can be constructed. Thus, sentence (4)

(4) *The Food and Drug Administration has seriously cautioned expectant mothers to avoid one of life's simple pleasures: a cup of coffee.*

has more than 200,000 paraphrases (Mel'čuk 1981: 31-32). Similarly, a text may have several meanings (= have distinct readings). The extremely involved character of the meaning-text correspondence makes it practically impossible to write its rules directly from meanings to texts. It turns out that for a better perspicuity and surveyability, the correspondence between meanings and texts must be broken down into simpler components. This entails the following:

Postulate 3

(5) To describe the correspondence $\{SemR_i\} \Longleftrightarrow \{PhonR_j\}$, TWO INTERMEDIATE LEVELS of utterance representation are introduced: Synt(actic) R(epresentation) and Morph(olo-gical) R(epresentation).

Therefore, (2) can now be rewritten, in a more developed form, as (6):

(6) $\underbrace{\{SemR_i\}}_{\text{Semantics}} \Longleftrightarrow \underbrace{\{SyntR_k\}}_{\text{Syntax}} \Longleftrightarrow \underbrace{\{MorphR_l\} \Longleftrightarrow \{PhonR_j\}}_{\text{Morphology + Phonology}}$

The SyntR and MorphR are centered, respectively, around the sentence and the word. Because of the obvious space constraints, we will not touch here upon such important properties of the SyntR and the MorphR as their division into deep and surface sublevels, the formalisms used, etc. We will limit ourselves to insisting on the stratificational, or multistratal, character of the proposed model (cf. Lamb 1966 and Sgall 1967). A Meaning-Text linguistic$_{1/2}$ model consists, as is seen in (6), of three major components, which form, so to speak, a production chain:

SEMANTICS establishes the correspondence between the infinite set of SemR's and the infinite set of SyntR's;

SYNTAX established the correspondence between the SyntR's and the MorphR's;

MORPHOLOGY + PHONOLOGY establish the correspondence between the MorphR's and the PhonR's.

In this presentation, we will be concerned exclusively with the semantic component of an MTM.

Note that in principle the correspondence "$\Longleftrightarrow$" is bidirectional: an MTM should be able to go both from meanings to texts (= speech production) and from texts to meanings (= speech understanding). Logically, both directions are, of course, equivalent and both correspond to actually observable processes. Linguistically$_2$, however, they are not equivalent: natural language gives a more prominent place to the speaker than to the addressee:

- The speaker can speak (or write) even without an explicit addressee (to himself, to God, to posterity), while an addressee is inconceivable without an explicit speaker.
- Reference to, or value judgements by, the speaker (rather than by the addressee) are included in the meaning of a host of linguistic$_1$ units: shifters (like *here* = 'where the speaker is'), speaker-oriented verbs like *come* vs. *go*, performative verbs, all affective and derogatory terms, and many others, without mentioning the cases of empathy (the speaker identifying himself with a character presented in his utterance), prepositional choices (*X in front of Y* as opposed to *Y behind X*, as a function of where the speaker mentally places himself), etc.
- Most important, the speaker knows perfectly well what he is going to say; his only problem - when he starts from a

given meaning - is to find an appropriate linguistic$_1$ form (= text) to convey this meaning. His activity *qua* speaker is a purely linguistic$_1$ one. The addressee, on the other hand, has no previous knowledge of the meaning he is supposed to extract from the utterance. He has to use his logic, his general abilities to infer and guess, his knowledge of the world, etc. - in addition to his linguistic$_1$ skills proper. The addressee's activity *qua* addressee is not purely linguistic$_1$: it includes, to a considerable degree, many non-linguistic$_1$ operations, with the result that linguistic$_1$ operations occupy a rather modest place[2].

Consequently, the viewpoint of the speaker is by far the more advantageous for linguists. Describing language as a system for EXPRESSING meanings and not the other way around, we can concentrate on genuine linguistic$_1$ phenomena, thus avoiding involvement with problems of rule ordering and application, modalities of processing, encyclopedic understanding, and the like, which are absolutely irrelevant to linguistics. Let it be emphasized that certain linguistic$_1$ phenomena can be properly recognized and systematically studied only if considered in the direction from meanings to texts. Thus the following oppositions do not represent any interesting problem from the viewpoint of the addressee:

(7) a. **strong** *warning* vs. **considerable** *attention* ⟨**considerable warning*, **strong attention*⟩;
b. *They differ* **widely** vs. *They* **greatly** *miss her* ⟨**differ greatly*, **miss widely*⟩;
c. **much/widely/greatly** *publicized* vs. **heavily** *settled* [*area*] ⟨**heavily publicized*, **much/widely/greatly settled*⟩.

A listener or a reader easily understands the expressions in (7) and misses the interesting fact that boldfaced lexemes express one and the same meaning, namely 'very', and are (complementarily) distributed according to the lexeme modified. In fact, these lexemes are values of what is called the lexical function **Magn**:

(8) **Magn**(*warning*) =*strong* **Magn**(*attention*) =*considerable*
Magn(*differ*) =*widely* **Magn**(*miss*) =*greatly*
Magn(*publicized*) =*much, widely, greatly* **Magn**(*settled*) =*heavily*

To discover that natural languages feature a limited number of very abstract and general meanings such that any one of these has numerous lexical expressions distributed as shown above, one needs to look at language from the speaker's viewpoint. (About lexical functions see below, p. 60 ff.)

Therefore, in sharp contrast with most linguistic$_2$ schools (traditional grammar, European and American structuralism, transformational grammar and its various outgrowths), the Meaning-Text theory insists on the meaning-to-text direction in linguistic$_2$ research, as well as in linguistic$_2$ description.

To sum up: The Meaning-Text theory aims at developing Meaning-Text models of natural languages. An MTM is taken to be a system of rules which establish correspondences between semantic and pho-

netic representations of utterances, the SemR's being written in a special semantic language, devised by the researcher. This is a multilevel, or multicomponent, system, with a semantic component responsible for the correspondence between semantic and syntactic representations; the semantic component "translates" SemR's into SyntR's (and vice versa). Last, but not least, the direction of research and description is that of production: from meanings to texts.

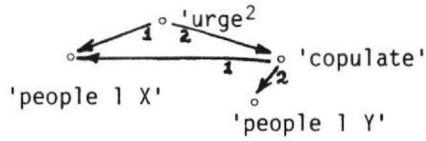
Semantic Representation in the Meaning-Text Theory. In conformity with the goal of this paper, we will now try to throw light on the concept of semantic representation.

Let us begin with an example. In Toronto's *The Globe and Mail* (Aug. 5, 1985, N6) we find the following title:

(9) *The death of libido*;

this is a short editorial, claiming that watching situation comedies on American TV has a pernicious effect on the viewer's sexual drive. The meaning of this title is clear; how can we represent it? Well, *libido* means (roughly) 'urge^2 to copulate' (superscripts and numbers after words in our semantic descriptions refer to intended senses in *Longman Dictionary of Contemporary English*); 'urge^2' [noun] is by necessity someone's urge; in this context, an indefinite group of people is meant: 'people 1'. Then, taking 'urge^2' and 'copulate' to be two-place predicates[3], we can write:

(10) *libido of X* =

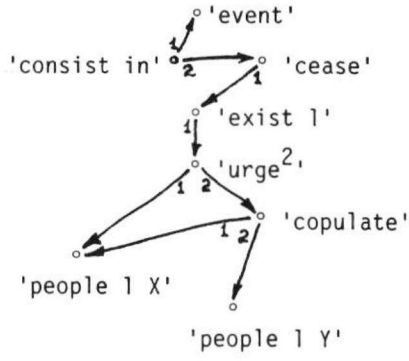


Or, to express it in prose,

(10') *libido of X* = 'urge^2 of people 1 X to copulate with people 1 Y'

The noun *death* is used in (9) metaphorically and means 'event 1 consisting in that X ceases to exist 1'. In our formalism, then, we have

(11) *The death of libido* =



Numbers assigned to arrows in diagrams of (10) and (11) identify different arguments of the same predicate.

We believe that (11) represents the linguistic$_1$ meaning of the phrase *the death of libido* quite well. Two qualifications seem, however, to be in order.

First, while the expressions put in single quotes in (10) and (11) look like English words, they are NOT English words - rather, they are handy designations of specific senses of the corresponding English words, which, like almost all English words, are polysemous. To disambiguate them, we are using sense numbers borrowed from the *Longman Dictionary*, as indicated above. (For our illustrative purposes, it could be any other dictionary.) A word taken in one well-specified sense is called a lexeme. Then, the expressions in single quotes are SEMANTIC UNITS, or sememes, notated with English lexemes. These sememes do not feature syntactic and morphological properties typical of English lexemes that represent them. They are indeed units of meaning.

Second, one might ask the legitimate question about the meaning of sememes themselves. For example, what does *cease* mean? In this case, the answer is simple:

(12) *cease to P* = 'begin 1' ('not' ('P'$_1$)$_1$)

[*John ceased to work* = 'John began not to work']

But, then, what is *begin 1*? The answer is still at hand:

(13) *begin 1 to P* = 'at moment t_0, P does not exist 1;
at moment t_1, P exists 1;
$t_1 > t_0$'

However, things do not go always as smoothly as this. What does *exist 1* mean? And *moment 1*? And *not*? For the time being, I cannot answer.

I do not imply that these terms cannot be explained or that their meaning cannot be described at all. It can, but maybe NOT IN LINGUISTIC$_1$ TERMS. From the viewpoint of strictly linguistic$_1$ meaning, these sememes are elementary or indecomposable: they are semantic primitives. (Cf. 13 semantic primitives postulated by A. Wierzbicka: e.g., 1972 and 1980.[4])

Now we can proceed to specify the formal language, or SEMANTIC METALANGUAGE, in which semantic representations within the MTT framework can be written. (To simplify the presentation, we will not consider the communicative organization of meaning, i.e. contrasts of topic *vs.* comment, given *vs.* new, etc.)

Like any other formal language, the semantic language of the MTT is a pair of sets: a finite set of elements called alphabet (or lexicon) and a finite set of expressions called rules; there are formation rules, which specify well-formed configurations of elements, and transformation rules, which specify equivalences between well-formed configurations. Let us take these components of the semantic language in turn.

An expression in the semantic language, i.e. a Sem(antic) R(epresentation), is, formally speaking, a completely labeled network : a connected oriented graph whose vertices, or nodes, are labeled with sememes and whose arcs, or branches, are labeled

with arbitrary distinctive symbols (we will use Arabic numbers; the purpose of using them is, as indicated above, to distinguish different arguments of the same predicate, cf. below).[5]

The ALPHABET of the semantic language in question includes:

(a) A tiny list of formal elements (used to construct networks): vertices, represented by points; arcs, represented by arrows; and natural numbers as distinguishers, appearing as labels on arcs.

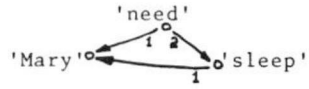
(b) A huge list of sememes (several million, generally speaking); each sememe corresponds to a specific sense of a specific word of the language in question. A sememe can be elementary, and then it is called a seme; otherwise, it is complex and is representable in terms of other sememes and/or semes.

Sememes fall into two major classes:

- functors, or sememes having "places" for other sememes, which are then their arguments, and
- names (of (classes of) objects), which may only serve as arguments but may not have their own arguments.

The relationship between a functor and its i-th argument is shown, in the semantic language, by an arrow labeled i and pointing from the functor to the argument. For example, 'sleep' is a one-place functor, and therefore, *Mary sleeps* = 'Mary' $\xleftarrow{1}$ 'sleep'; 'need' is a two-place functor, so that

Mary is sleepy =



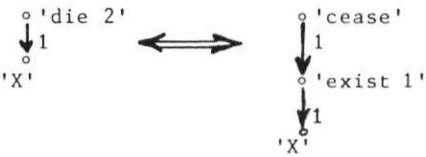
Functors are meanings corresponding to actions ('unite', 'kiss', ...), states ('sleep', 'disappear', 'joy', ...), properties ('lovely', 'blue', ...), relations ('more than', 'be part of', ...), parameters ('the speed of', 'the price of', ...), events ('rain', 'explosion', 'fall', ...), quantities ('many', 'three thousand', ...), etc. Names are meanings corresponding to objects, substances, natural species, etc.

Functors are subdivided, first, according to the number of the arguments they can take (one-place, two-place, ...; in actual fact, natural languages do not show functors with more than 6 arguments); and second, according to the restrictions on the semantic type of the arguments they can take (both arguments of 'cut' must be names; the only argument of 'begin' must be a functor; the first argument of 'see' must be a name, but the second may be either name or a functor). There are three major types of functors: predicates, quantifiers and logical connectors, but we will not delve into this matter.

FORMATION RULES for SemR's are trivial and largely obvious. The following are some of the more basic ones:

- a SemR must be a connected oriented labeled graph;
- the number of arrows leaving a node which is labeled with a functor must correspond to the number of places of this functor;
- no arrow should leave a node labeled with a name;
- all the restrictions inherent in functors which appear in a SemR should be observed; etc.

TRANSFORMATION RULES for SemR's are equations which correlate (non-elementary) sememes with their DECOMPOSITIONS: 'die 2 ' = 'cease to P' = begin 1 to not-P', etc. Note that, strictly speaking, we should use semantic networks and write as follows:



However, here as everywhere below, we allow ourselves to simplify the presentation, if this does not entail ambiguities or misunderstandings.

By means of such rules we can carry out equivalent transformations of SemR's:

'His desire 1 died 2' = 'His desire 1 ceased to exist 1' =
= 'His desire 1 began 1 to not-exist 1'.

Let it be emphasized that a rule of the form 'X dies 2' = 'X ceases to exist 1' is nothing more than a lexicographic definition of a particular lexical sense of an English word. It is here that the concept of a special dictionary enters the scene; we will return to it shortly.

Put into a nutshell, the semantic language for, say, English, is a hybrid using the grammar of oriented labeled networks and the English vocabulary - but in a disambiguated form: we take as basic lexical units not words, but word senses defined in terms of more elementary senses, which in their turn are defined in terms of still more elementary senses, and so on, until we arrive at semantic primitives; these latter have to be specified by a list. To achieve this, our definitions should obey precise and rigorous rules (for instance, vicious circles must be banned), which we cannot discuss. (A few words, though, will be said about them in Section II.) Instead, let us consider a sample SemR: the SemR for a sentence taken from the same issue of *The Globe and Mail* as mentioned above, on page (Aug. 5, 1985; page N6):

(14) *Four Soviet soldiers lost on maneuvers in Czechoslovakia traded their tank to a tavern owner for two cases of vodka and were found sleeping off the liquor in a forest two days later, a West German newspaper has reported.*

We have to simplify our SemR drastically in order to make it surveyable. Thus, we do not even try to decompose many sememes which are readily decomposable. For instance, we used in the SemR, without further ado, the expressions *get lost* [= 'come to not know where is the way which one should follow'], *sleep off the liquor, maneuvers, exchange,* and others. The case of *exchange* would be especially interesting. Decomposing *X exchanges Y with Z for W* into 'X causes that Z owns Y, which previously X owned, having the goal of thereby causing - and X thereby causes - that Z causes that X owns W, which previously Y owned' would much better show the semantic link between soldiers, vodka and their sleeping

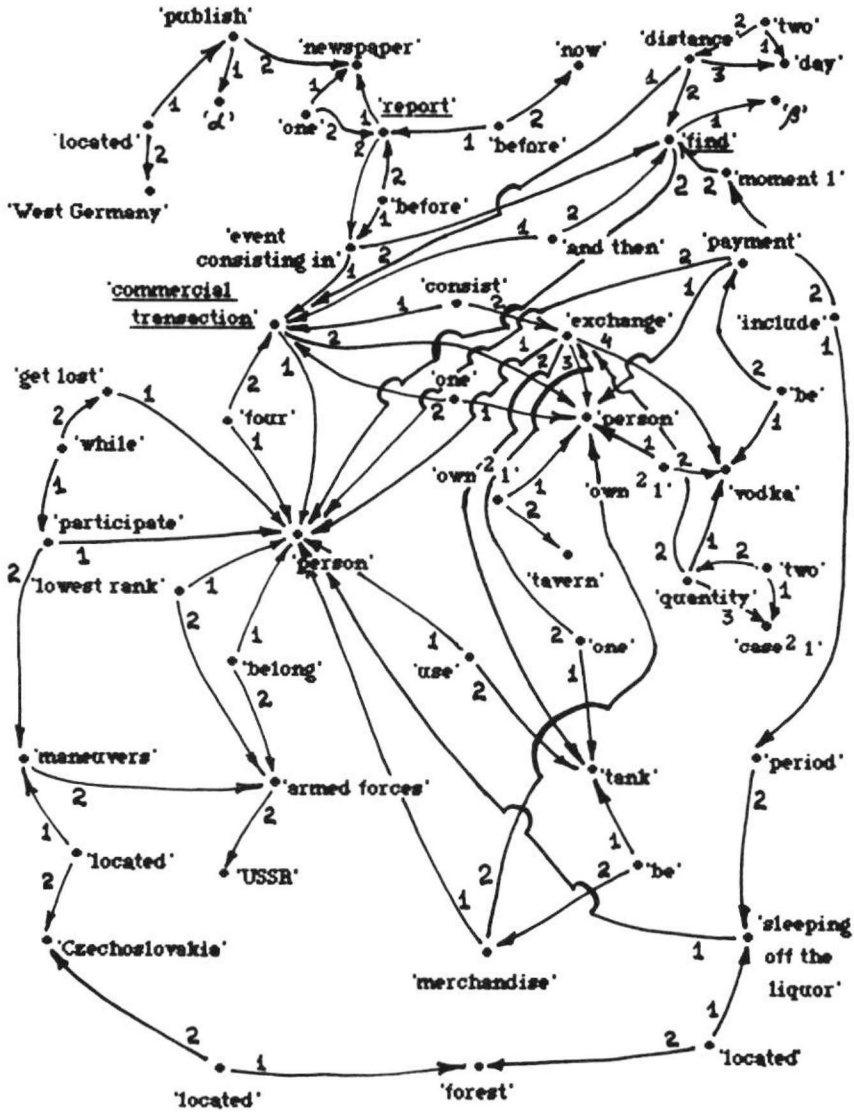


Figure 1
The Semantic Representation of Sentence (14)

off the liquor. Furthermore, sense distinguishing numbers are not shown with the **sememes**. We cannot explain, either, many important details of SemR (15); we will, however, comment on four technical points.

(i) All temporal relations, grammatical or otherwise, are represented in the same homogeneous way: by means of the sememe 'before'. Thus '(to) report before now' renders (very roughly!) the present perfect of *has reported*; *X two days later than Y* appears as 'Y before X (and) the distance between X and Y is two days'; for *X were found sleeping...* we have 'someone found X, the moment of finding being included into the period of X's sleeping'. Similarly, all locative relations are shown in a standard way as well: the sememe '(to be) located in'.

(ii) The sememe 'use' in 'soldiers use tank' is applied very much like the expressions *use the bathroom* ⟨*the telephone*⟩, i.e. in the sense 'to use X the way X is designed to be used'; this is the meaning of the lexical function **Real**, see below, p. 68.

(iii) To show the scope of the newspaper's report, a node labeled 'event consisting in...' is used: the arrows leaving this node identify the two events ('(performed) a commercial transaction' and '(somebody) found...') that enter into this scope.

(iv) The sememes underlying semantic assertions (as opposed to presuppositions and modifications) are underscored.

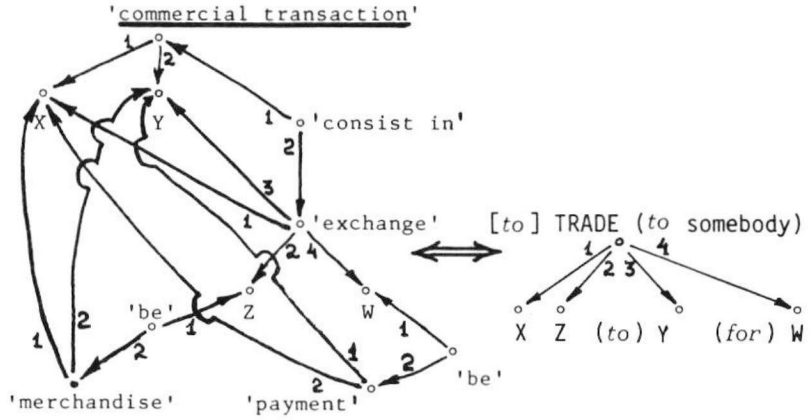
Strictly speaking, the network which appears in (15) is not a SemR: it is only a part of a SemR, namely the so-called Sem(antic) S(tructure) of sentence (14). A complete SemR must include another part: the Comm(unicative) S(tructure), which specifies the division of the given meaning into theme (topic) and rheme (comment), into given vs. new information and the like. But as indicated above, for simplicity's sake we make abstraction from the CommS and, by obvious metonymy, allow ourselves to call (15) a SemR.

Notice that for pedagogical reasons, it might be more advisable to choose a simpler SemR, i.e. to present a shorter and more trivial sentence, as is often done to illustrate a point. We have, however, preferred not to amuse our readers with toys but rather to show them the real thing, even at the risk of frightening some of them away. The crucial feature of the MTT is that it does face the enormous complexity of natural language semantics, and we feel it important for our readers to be fully aware of the extent of this complexity.

The SemR as proposed has a property which is central to the present paper: the elements of a SemR are, generally speaking, "smaller" than the lexemes which must be used in the corresponding sentence. Thus, 'person belonging to the armed forces of X and having the lowest rank therein' is SOLDIER; 'X (performs) a commercial transaction with Y consisting in exchanging by X with Y a Z as a merchandise for a W as a payment' is X TRADES Z *to* Y *for* W; etc. In the Synt(actic) R(epresentation), however, the elements are of course actual lexemes. Therefore, the main bulk of semantic rules of a language, that is, of the rules that correlate the SemR and the SyntR conveying the same meaning, is composed of

rules having the following form:

(16)



There are other types of semantic rules as well; e.g., rules that map sememes onto morphological categories, such as tenses ('before now' ⟺ past tense), grammatical numbers etc. But semantic rules of type (16) are by far the most numerous: for a given language, they number between 10^5 and 10^7 - since every such rule represents a particular lexeme, or a word sense.

Now, a semantic rule of type (16) is nothing else but (with all additional data concerning cooccurrence) a DICTIONARY (= LEXICAL) ENTRY. From this it follows that semantics is, roughly speaking, a dictionary - but a very specific dictionary. We will characterize it in Section II of our communication.

II
The Explanatory Combinatorial Dictionary as a Crucial Component of a Meaning-Text Model

General Characteristics. The Explanatory Combinatorial Dictionary (= ECD) differs from all more familiar monolingual dictionaries in that it is not a commercial dictionary which aims at a particular public, is adapted to fulfill a particular task, and is bound to observe various pedagogical, typographical and financial constraints. An ECD is conceived and developed as one part of a scientific (= theoretical) description of the language under analysis and is thus a theoretical lexicon (cf. Lakoff 1973: 162-164). An ECD is to a "normal" dictionary what a theoretical grammar is to a language textbook. This fundamental property entails the following five features typical of an ECD.

1. An ECD is a PRODUCTION-oriented dictionary: it is intended to supply all the information which is conveyed by lexical

units and which is necessary to express a given thought. In conformity with the orientation of the meaning-text model from meaning to text, an ECD is also oriented the same way.

2. An ECD is a SEMANTICS-based dictionary (that is why it is called explanatory): the definition of the entry lexeme, written in a special semantic language (the one we have discussed above), serves as a basis for the description of the paradigmatic and syntagmatic relations of this lexeme.

3. An ECD is a COMBINATORIAL dictionary: it describes the syntactic and lexical collocations of the entry lexeme in the greatest possible detail.

4. An ECD is a SYSTEMATIC dictionary: it lays heavy emphasis on the homogeneity of the lexicographic descriptions. It is developed by lexical fields rather than by alphabet - similar lexemes have similar descriptions; all links existing between the definitions and the syntactic cooccurrence of a lexeme must be made explicit; etc.

5. An ECD is a FORMAL dictionary: all information is presented by means of a rich lexicographic metalanguage, which ensures a rigor never before attempted in lexicography.

Consistent with these five properties, an ECD features a standard, rigid structure for its entries, as described below.

Structure of an ECD Entry. Our discussion of ECD entries will draw on examples from the recently published Russian ECD (Mel'čuk and Zholkovsky 1984).

The basic unit of an explanatory combinatorial dictionary is a dictionary entry corresponding to a single lexeme or a single phraseme - one word or one phraseme taken in one separate sense. A family of dictionary entries for lexemes which are sufficiently close in meaning and which share the same signans (i.e. identical stem) is subsumed under one vocable, which is identified in UPPER-CASE letters. Different vocables which are the same graphically (= homonyms) are distinguished by numerical superscripts: Russ. BRAK[1] 'marriage' *vs.* BRAK[2] 'defective merchandise'.

The lexemes within a single vocable are distinguished by special indices mentioned here in order of increasing semantic proximity (cf. the use of numerical distinguishers for sememes, illustrated above).

Roman numerals differentiate lexemes whose definitions have a non-trivial common semantic component but whose semantic relationships are not sufficiently regular: e.g., VYSOTA I 'height or altitude [as a vertical measure]', VYSOTA II 'level [of prices, aspirations, pressure]', VYSOTA III 'pitch [of sound]', VYSOTA IV 'altitude [of the sun over the horizon]', VYSOTA V 'altitude [of a triangle]'.

Arabic numerals indicate sufficiently regular semantic relationships among lexemes that share non-trivial semantic components, or regular polysemy: e.g. SPAT'[1] I.1 'sleep' *vs.* SPAT'[1] I.2 'be inert, as if sleeping'. The literal and the figurative meanings of *vspyxivat'* 'blaze up' - 'flare up' are distinguished in this way, as are *kipet'* 'boil' - 'seeth with', *zastyt'* 'congeal' -

'become still [with fright, etc.]'; and the like.

Lower-case letters differentiate lexemes with slight semantic differences which are maximally regular: e.g. SKOROST' 1a 'rate of speed' - SKOROST' 1b 'great speed'. The same goes for *vysota* 'height', *temperatura* 'temperature' - 'high temperature', *kačestvo* 'quality' - 'excellent quality', etc.

It should be stressed that all full idioms are entered in the ECD separately. (A full idiom is a phrase whose meaning cannot be computed from the meanings of its words and such that no constituent word retains its full meaning; cf. *shoot the breeze* or *More power to him!* in English.) Full idioms are provided with dictionary entries as if they were single lexemes: for example, *iz ljubvi k iskusstvu* 'for the love of the thing' or *kolot' glaza* 'to throw something in somebody's teeth'. Thus the ECD does not distinguish between mono-lexemic and multi-lexemic units as head entities in its entries.

An ECD entry is divided into three major zones (we will not even mention other subdivisions, which are less important in the present context, such as morphological information, usage labels, etc.):

- semantic zone;
- syntactic zone;
- lexical cooccurrence zone.

1. Semantic Zone.

The semantic zone contains the SemR of the entry lexeme, or its DEFINITION, written in accordance with the following six principles:

1) Generally speaking, the definiendum is not simply an entry lexeme but rather a propositional form - the lexeme with variables representing its semantic actants, or argument roles. Thus we define not TO HELP but rather *X helps Y in Z by/with W*; not AGGRESSION but *aggression of X against Y*; not FAITHFUL but *X, faithful to Y*; etc.

2) The definiens is formulated in terms of lexemes which are semantically simpler than the entry lexeme (= definiendum). "X is semantically simpler than Y" means that we need X to define Y but Y cannot (and will not) be used to define X. Thus if *maneuvers of X* is defined as 'a large-scale training exercice of the armed forces X simulating combat', then 'maneuvers' cannot appear in the definitions of *large-scale, train, exercise, armed forces*, etc. This entails the SEMANTIC DECOMPOSITION of any entry word, which in its turn, precludes vicious circles, that common plague of practically all existing dictionaries. Consistently applied, semantic decompositions lead to a set of semantic primitives.

3) In the definiens, neither ambiguity nor synonymy of terms are allowed. To avoid ambiguity, the definition is written in terms of word senses, i.e. lexemes - lexical units supplied with distinctive indices, as specified above - rather than in terms of polysemous words. To avoid synonymy, just one expression is chosen and fixed explicitly for any meaning: e.g., we say only 'having the goal of' - instead of '(in order) to', 'aiming at' or

'with the aim/goal of', etc. (In this way, an ECD ensures UNIVOCITY of defining terms.)

4) The definiendum and the definiens are strictly synonymous, and ABSOLUTE MUTUAL SUBSTITUTABILITY is required of them in all possible contexts. This means that a definition in an ECD contains only necessary components such that, taken together, they are sufficient to uniquely specify the definiendum. (This is the ADEQUACY principle.)

5) Any lexemes that belong to the same vocable, i.e. that are semantically related, must show this relatedness explicitly - by displaying an identical semantic component, called SEMANTIC BRIDGE.

6) Any vocables that are semantically related must be organized according to the same pattern: they show roughly the same number and order of related lexemes, the definitions of lexemes are written following the same general schema, etc. (This is the UNIFORMITY principle; it is directly linked to the systematic character of an ECD and its field structure.)

As an example, let us quote the definition of Russ. SKOROST'la 'speed':

skorost' P-a/X-a - Y 'the speed of P/X being Y' = 'quantity II which characterizes 2 the motion I.1 P of X by the distance I.2a Y which X covers III in unit 4 time 2, or the value 6 of this quantity II'.

2. Syntactic Zone.

An ECD fully specifies all the expressions which can be headed by the entry lexeme and which are "bound" by it, i.e. which are not free but rather idiomatic, to a lesser or greater extent, with respect to the given entry. This is done by means of the so-called government pattern (= GP). A GP is a table in which each column represents one semantic actant of the lexeme (marked by the corresponding variable), and each element in the column represents one of the possible surface realizations of the corresponding syntactic actant. For instance, the GP for the Russian lexeme SKOROST' la 'speed' has the form:

1 = P or 1 = X	2 = Y
1. N_{gen} 2. A_{poss}	1. Num_{nom} N' (v 'per' N''_{acc}) 2. v 'of' Num_{acc} N' (v 'per' N''_{acc}) 3. Num_{nom} N 4. v 'of' Num_{acc} N 5. A 6. N_{gen}

This GP specifies that the first deep-syntactic actant of the lexeme SKOROST' 1a 'speed' fills the slot of the variable P or X in its definition (1 = P or 1 = X, where X stands for the body, and P stands for the motion of the body whose speed is described). The second deep-syntactic actant fills the slot of the variable Y (2 = Y, Y being the value of the speed). The first deep-syntactic actant may be expressed on the surface either as a noun in the genitive case or as a possessive adjective (*skorost' samolëta* 'the speed of a plane' - *naša skorost'* 'our speed'). The second deep-syntactic actant has six surface realizations: 1) a complex noun phrase in the nominative consisting of two phrases: a noun phrase "Numeral in the nominative + Noun denoting unit distance" and a prepositional phrase "*v* 'per' + Noun denoting unit time", for instance, *skorost' desjat' kilometrov (v čas)* 'a speed of ten kilometers (per hour)'; for other five realizations we shall restrict ourselves to examples: 2) *skorost' v desjat' kilometrov (v čas)* 'a speed of ten kilometers (per hour)', 3) *skorost' 40 uzlov* 'a speed of 40 knots', 4) *skorost' v 40 uzlov* 'a speed of 40 knots', 5) *kosmičeskaja ⟨tysjačekilometrovaja⟩ skorost'* 'cosmic ⟨1000-kilometer⟩ speed', and 6) *skorost' sveta ⟨zvuka⟩* 'speed of light ⟨of sound⟩'.

A GP is usually provided with a number of restrictions. These are rules which establish the conditions under which the deep- or surface-syntactic actants of the entry lexeme can cooccur, and give all possible details relevant to the combinability of the lexeme in question with its syntactic actants. The notations used are:

$M_{1,2,3...}$ - 1st, 2nd, 3rd,... deep-syntactic actant of the lexeme;

$C_{1,2,3...}$ - surface realization of the 1st, 2nd, 3rd,... deep-syntactic actant (in most cases, this realization is the grammatical subject or the 1st, 2nd,... complement of the lexeme but it may also be an attribute or adverbial modifier);

$C_{i.j}$ - a specific means of marking the surface-syntactic element C_i (that is, i is the number of the column in the GP, and j is the number of the element in that column).

For instance, the GP of the lexeme SKOROST' 1a has such restrictions as:

2) $C_{2.1,2.2}$: N′ is unit distance [*metr* 'meter', *fut* 'foot', ...], N″ is unit time [*sekunda* 'second', *mesjac* 'month',...]

3) $C_{2.3,2.4}$: N is a unit speed [*uzel* 'knot', *max* 'Mach', ...]

6) Impossible: $C_1 + C_{2.6}$

7) Undesirable: $C_1 + C_{2.1-2.4}$, if M_1 is not a movement and SKOROST' does not depend on PRI 'under'.

The GP and all the restrictions on it are exemplified by all possible combinations of the entry lexeme with its actants as well as by all the impossible combinations prohibited by those restrictions; every starred example is followed by the number of the restriction it violates.

3. Lexical Cooccurrence Zone.

This zone embodies the major novelty proposed in an ECD: namely, exhaustive and systematic description of restricted lexical cooccurrence of the entry lexeme. We mean the type of lexical collocation italicized in (17) - a dozen sentences collected in ten minutes from one newspaper page:

(17) *a.* The President *clamped* (= *imposed*) an overnight *curfew* on three areas... *to stamp out* (= *put down*) *violence*.

b. The panel *issued a report* to the Secretary of State.

c. President Reagan *rejected pleas* to *open talks* with striking US controllers.

d. Pope *released from hospital* [headline]. The Pope *left the hospital* yesterday, three months and one day after he was *struck by* two *bullets*. He *said* a brief *prayer*...

e. The *heaviest* prison *terms* in Kentucky history (more than 1,600 years each) *have been handed down* against two men.

f. South African troops *have spread a dragnet* across the country in a search for three *heavily armed* black guerillas.

g. The ANC *has claimed responsibility* for the *attack launched* last Tuesday in which four *rockets were fired* at an army camp.

h. We are looking for senior consultants of *proven competence* to *satisfy the demands* of our growing business.

Texts - from colloquial to artistic to technological - swarm with expressions of this type.

To describe all such collocations, the important concept of LEXICAL FUNCTION has been introduced.

A lexical function (henceforth, LF) **f** is, like any mathematical function, a dependency that associates with a given "quantity" - its argument - a variable "quantity" - its value, the latter being controlled by the former. More precisely, an LF **f** associates with a lexical unit *W* (a word or a phrase) a set W_i of (more or less synonymous) lexical units that express - contingent on *W* - a specific idea (such as 'very', 'begin', 'implement') represented by **f**. For example, the LF **Magn**, which for the present can be glossed roughly as 'very', in conjunction with the Russian words *naprjaženie* 'voltage' or *temperatura* 'temperature' is expressed by the adjective *vysokij* 'high'; in conjunction with *vysota* 'height', however, the same function is expressed by *značitel'nyj* 'considerable', *bol'šoj* 'great' or *ogromnyj* 'enormous'; and in conjunction with *vibracija* 'vibration', by *sil'nyj* 'strong' or *intensivnyj* 'intense'. Thus we get *vysokoe naprjaženie* 'high voltage', *vysokaja temperatura* 'high temperature', *značitel'naja (bol'šaja, ogromnaja) vysota* 'considerable (great, enormous) height', and *sil'naja (intensivnaja) vibracija* 'strong (intense) vibration'; but we do not get **sil'noe (značitel'noe) naprjaženie*, **bol'šaja (ogromnaja, intensivnaja, sil'naja) temperatura*, **intensivnaja*

*(sil'naja) vysota, *vysokaja (bol'šaja) vibracija,* etc.

The importance of LF's consists in the discovery of the following fact: in all natural languages there is only a limited number (about several dozens) of meanings that resemble 'very' in that they also each determine an LF.

And now, a formal definition of lexical function.

A dependency **f** is called lexical function if and only if it associates with a lexical unit W - the argument of **f** - a set **f**(W) of lexical units - the value of **f** - such that the following two conditions are simultaneously met:

For any two different W^1 and W^2, if **f**(W^1) and **f**(W^2) both exist, then:

1. Both **f**(W^1) and **f**(W^2) bear an identical relationship with respect to meaning and deep-syntactic role to W^1 and W^2, respectively. [This condition is language-independent.]
2. At least, in some cases, **f**(W^1) $\neq$ **f**(W^2). [This condition is completely language-dependent; it means that in the given language, the value of **f** is phraseologically bound by its argument.]

An important proviso: A lexical function is not a genuine semantic unit, let alone a semantic primitive. LF's are introduced to describe restricted lexical cooccurrence and derivation, but by no means semantics. First, there are LF's that are semantically empty, their values being limited to purely syntactic roles (cf. **Oper**$_i$, **Func**$_i$, **Labor**$_{ij}$ below). Second, the expressions making up the value of a given LF **f** for a given argument need not be perfectly synonymous; it suffices for them to share a rather general and abstract meaning '**f**' while differing in other components.

We will be interested in a particular type of LF, namely standard lexical functions, which form a proper subset of all lexical functions. A standard LF simultaneously satisfies two additional conditions:

3. The LF **f** is defined for a sufficiently large number of arguments. In other words, **f** has a sufficiently large semantic cooccurrence: its meaning '**f**' is sufficiently abstract to be compatible with a large number of others meanings. [This condition is language-independent.]
4. The LF **f** has a sufficiently large number of linguistic expressions as its possible values. In other words, the set of all **f**(W_i), for a vast variety of W_i, is sufficiently rich. [This condition is completely language-dependent.]

Let us illustrate this point with two examples. The meaning 'manufactured from very dark rye flour' in Russian has three expressions: *čërnyj* 'black', *ržanoj* 'rye[Adj]' and *iz ržanoj muki* 'from rye flour', and these expressions are phraseologically bound:

- Only *xleb* 'bread' or *suxar'* 'rusk' can be called *čërnyj*, while very dark rye *buločka* 'bun', *bublik* 'bagel', *blin* 'pancake',

korž(ik) '(a kind of) flat dense dry bread', *lepëška* 'a flat cake' etc. cannot: **černaja buločka* 'black bun', e.g., is readily understandable but ungrammatical.

- Only *xleb* 'bred' and *lepëška* 'flat cake' but nothing else can be called *ržanoj*. (Notice that *černyj xleb* is always *ržanoj xleb*, but *ržanoj xleb* can be *svetlyj* 'light', as well as *černyj*.)

- Speaking of *buločki, bubliki, bliny, korži* and *koržiki*, Russian uses *iz ržanoj muki* (but not with reference to *suxari* 'rusks' and hardly with reference to *xleb*): **černyj/ržanoj bublik*, etc.

As we see, this meaning satisfies Conditions 1 and 2 (*černyj: xleb = iz ržanoj muki: bublik = ržanaja: lepëška* vs. **ržanaja buločka, ...*) and therefore specifies a lexical function. However, this meaning violates Conditions 3 and 4: it is conceivable only with the names of bread-like baked products made from dough (so that it is semantically too specific) and it has only three expressions. Therefore, it is not a standard LF.

The meaning 'it is necessary to P this X' has in Russian a phraseologically bound expression *nuždat'sja* 'need' that is possible with some P's while impossible with others: *Ėta stat'ja nuždaetsja v ispravlenii <v dorabotke>* 'This paper needs to be corrected <more work>' but not **Ėta stat'ja nuždaetsja v soxranenii <v otpravke avtoru>* 'This paper needs to be saved <to be sent to the author>'. This meaning satisfies - in addition to Conditions 1 and 2 - Condition 3 (it is extremely abstract) but it still violates Condition 4: there are not numerous synonymous expressions (in fact, there is only one other expression for the meaning in question satisfying Condition 1: *trebovat'* 'require', which is in free variation with *nuždat'sja*).

Both above-mentioned meanings - 'manufactured from very dark rye flour' and 'it is necessary to P this X' - are non-standard lexical functions in Russian. In what follows, only standard LF's are considered.

Since both defining conditions for standard LF's include the vague expression 'sufficiently large number', there is no sharp borderline between standard and non-standard LF's, that is, there are no formal criteria to tell them apart. This fact reflects the graduality so typical of natural languages. The concept of standard LF is fuzzy, as are most linguistic concepts.

Within the class of standard lexical functions, we will distinguish simple LF's and compound LF's, the latter being built out of the former. Notice that simple in this context by no means implies 'elementary' or 'further unanalyzable': some of our simple LF's could be represented in terms of other simple LF's (and thus could be treated as compound). Nevertheless, for purely linguistic reasons (primarily, frequency of occurrence) we consider a particular set of LF's as simple and take this set to be the basis of lexicographic descriptions.

Thus only simple standard lexical functions are included in the main body of our systematic survey. (This allows us to omit the adjectives simple standard everywhere, since the omission cannot lead to a confusion.)

List of Lexical Functions

A lexical function, notated by a boldfaced Latin abbreviation, is written before the parentheses enclosing its argument (a familiar mathematical functional notation). For example:

Function Argument		Function Value
Magn(*shave*)	=	*close, clean*
Magn(*easy*)	=	*very, extremely, ..., as pie*
Magn(*scoundrel*)	=	*unmitigated, of the first water*
Magn(*condemn*)	=	*strongly, in strongest terms*
Magn(*cold*)	=	*very, terribly, ..., enough to freeze balls of a brass monkey*

[**Magn** is from Lat. *magnus* 'great, big']

As stated above, LF's are one of the central notions to a new type of dictionary, the Explanatory Combinatorial Dictionary. The simple standard lexical functions will be listed below in the order in which they appear in a lexical entry in such a dictionary.

1. **Syn** - synonym; $\mathbf{Syn}_{\supset}$, $\mathbf{Syn}_{\subset}$, and $\mathbf{Syn}_{\cap}$ designate, respectively, synonyms with broader, with narrower, and with intersecting meanings. (Symbols $\supset$, $\subset$ and $\cap$ have the same meaning when used with **Conv**, **Anti** and other LF's.) Examples: **Syn**(*streljat'* 'shoot') = *palit'* 'fire'; $\mathbf{Syn}_{\subset}$(*streljat'* 'shoot') = *obstrelivat'* 'fire upon; shell; machine-gun'; etc.

2. $\mathbf{Conv}_{ij}$ - conversive, i.e., a lexical item with the same meaning as the key word *W* but with deep-syntactic actants *i* and *j* permuted: $\mathbf{Conv}_{21}$(*vključat'* 'include') = *prinadležat'* 'belong to [a set]'; $\mathbf{Conv}_{231\subset}$(*mnenie* 'opinion') = *reputacija* 'reputation'. ['Reputation', in contrast to 'opinion', is necessarily held by several people: this is why it is a narrower conversive.]

3. **Anti** - antonym: **Anti**(*pobeda* 'victory') = *poraženie* 'defeat'.

4. **Gener** - generic concept such that '**Gener** + *W*' = '*W*' (where *W* is the key word): **Gener**(*gaz* 'gas') = *veščestvo* 'substance' [cf. *gazoobraznoe veščestvo* 'gaslike substance' = *gaz* 'gas'].

5. **Figur** - standard metaphor for *W*: **Figur**(*blokada* 'blockade') = *kol'co*, lit. 'ring' [*kol'co blokady* 'the grip of a blockade; a siege']; **Figur**(*tuman* 'fog') = *pelena* 'curtain' [*pelena tumana* 'curtain of fog'].

6-9. $\mathbf{S}_0$, $\mathbf{A}_0$, $\mathbf{Adv}_0$, $\mathbf{V}_0$ - syntactic derivatives of *W*, that is, noun (= substantival), adjective, adverb, and verb, respectively, which have the same meaning as *W*. Examples: $\mathbf{S}_0$(*streljat'* 'shoot') = *strel'ba* 'shooting'; $\mathbf{A}_0$(*streljat'* 'shoot') = *strelkovyj* 'shooting [attrib.]'; etc.

10. $\mathbf{S}_i$ - standard name of the *i*-th participant in the situation described by *W*: $\mathbf{S}_1$(*učit'* 'teach') = *učitel'* 'teacher'; $\mathbf{S}_2$(*učit'* 'teach') = *učenik* 'pupil'; $\mathbf{S}_3$(*učit'* 'teach') = (*učebnyj predmet* '(subject) matter [as in high school]'.

11-15. $\mathbf{S}_{instr}$, $\mathbf{S}_{med}$, $\mathbf{S}_{mod}$, $\mathbf{S}_{loc}$, $\mathbf{S}_{res}$ - standard name of instrument, means, mode, location, and result of the situation

described by *W*: $\mathbf{S}_{\mathbf{instr}}$(*streljat'* 'shoot') = *ognestrel'noe oružie* 'firearm'; $\mathbf{S}_{\mathbf{med}}$(*streljat'* 'shoot') = *boepripasy* 'ammunition'; $\mathbf{S}_{\mathbf{mod}}$(*rassmatrivat'* 'consider') = *vzgljad* [*na čto-l.*] 'a view [of something]'; *podxod* [*k čemu-l.*] 'approach [to something]'; $\mathbf{S}_{\mathbf{loc}}$(*sražat'sja* 'fight [as of two armies]') = *pole bitvy/boja* 'battlefield'; $\mathbf{S}_{\mathbf{res}}$(*učit'sja* 'learn') = *navyki* 'skills', *znanija* 'knowledge'.

16. **Sing** - 'one instance/unit of': **Sing**(*gorox* 'peas') = *gorošina* 'pea'; **Sing**(*celovat'* '[to] kiss') = *pocelovat'* 'give a kiss'.

17. **Mult** - 'aggregate of'; **Mult**(*korabl'* 'ship') = *flot* 'fleet'; **Mult**(*student* 'student') = *studenčestvo* 'student body'.[6]

18. **Cap** - 'head of': **Cap**(*universitet* 'university') = *rektor* 'president'; **Cap**(*fakul'tet* 'faculty, school') = *dekan* 'dean'.

19. **Equip** - 'staff/crew of'; **Equip**(*teatr* 'theatre') = *truppa* 'troupe'; **Equip**(*bol'nica* 'hospital') = *personal* 'personnel'; **Equip**(*brak*[1] 'marriage') = *suprugi* 'spouses'.

20. **Centr** - 'center/culmination of'; **Centr**(*les* 'forest') = *čaščа* [*lesa*] 'the thick [of the forest]'; **Centr**(*slava* 'glory') = *veršina* [*slavy*] 'summit [of glory]'; **Centr**(*bor'ba* 'struggle') = *apogej* [*bor'by*] 'climax [of struggle]'. **Centr** is current in combination with $\mathbf{Loc}_{\mathbf{in}}$ (see below): $\mathbf{Loc}_{\mathbf{in}}$**Centr**(*pustynja* 'desert') = *v serdce* [*pustyni*] 'in the heart [of the desert]'; $\mathbf{Loc}_{\mathbf{in}}$**Centr**(*doroga* 'road') = *posredi* [*dorogi*] 'in the middle [of the road]'.

21. $\mathbf{A}_{\mathbf{i}}$ - determining property of the *i*-th participant of a situation characterizing him according to his role in the situation: $\mathbf{A}_{\mathbf{i}}$(*gnev* 'anger' = *v* [*gneve*] 'in [anger]', *razgnevannyj* 'angry'; $\mathbf{A}_{\mathbf{i}}$(*slëzy* 'tears') = *v* [*slezax*] 'in [tears]' $\mathbf{A}_{\mathbf{i}}$(*skorost'* 'speed') = *so* [*skorost'ju...*] 'with a speed of...' [compare *spusk s takoj skorost'ju* 'the descent with such a speed']; $\mathbf{A}_{2}$(*streljat'* 'shoot') = *pod obstrelom* 'under fire'.

22. $\mathbf{Able}_{\mathbf{i}}$ - determining property of the *i*-th potential participant of a situation ('such that it can... easily'/'such that it can be... easily'): $\mathbf{Able}_{1}$(*plakat'* 'cry') = *slezlivyj* 'tearful'; $\mathbf{Able}_{2}$(*somnevat'sja* 'doubt') = *somnitel'nyj* 'doubtful'.

23. **Magn** - 'very', 'to a (very) high degree': **Magn**(*temperatura* 'temperature') = *vysokaja* 'high'; **Magn**(*rassmatrivat'* 'examine') = *vnimatel'no* 'attentively', *pristal'no* 'fixedly, intently'.

24-25. **Plus, Minus** - respectively, 'more' or 'less' (or 'to a greater/lesser extent') [than something else].

26-27. $\mathbf{Plus}^{\mathbf{refl}}$, $\mathbf{Minus}^{\mathbf{refl}}$ - indicate that the comparison is made with a former state of the same object: $\mathbf{IncepPredPlus}^{\mathbf{refl}}$(*temperatura* 'temperature') = *povyšat'sja* 'rise, increase' [for the LF's **Incep** and **Pred**, see below].

28. **Ver** - 'as it should be' [meeting intended requirements]: **Ver**(*udivlenie* 'surprise') = *iskrennee* 'sincere', *nepoddel'noe* 'unfeigned'; **Ver**(*sosud* 'container') = *celyj* 'whole', *germetičnyj* 'hermetical', 'leak-proof'; **Ver**(*pribor* 'instrument') = *točnyj* 'precise'.

29. **Bon** - 'good' [a standard praise for *W*]: **Bon**(*rezat'* 'cut') = *akkuratno* 'neatly, cleanly'; **Bon**(*sudno*[1] 'ship') = *komfortabel'noe* 'comfortable'.

30. $\mathbf{Pos}_i$ - a standard praise of one of the participants of the situation denoted by *W* [but not of the situation itself]: $\mathbf{Pos}_2$(*recenzija* 'review') = *položitel'naja* 'positive', while **Bon**(*recenzija* 'review') = *xorošaja* 'good', *zamečatel'naja* 'excellent', ..., *blestjaščaja* 'brilliant'; however, a *blestjaščaja recenzija* 'a brilliant(ly written) review' may well be *položitel'naja* 'positive' or *otricatel'naja* 'negative', that is, $\mathbf{Pos}_2$ or $\mathbf{AntiPos}_2$.

NB: The LF's **Magn**, **Ver**, **Bon** and $\mathbf{Pos}_i$ are often combined with **Anti**. Thus, for instance, **Magn**(*temperatura* 'temperature') = *vysokaja* 'high', and **AntiMagn**(*temperatura* 'temperature') = *nizkaja* 'low'; $\mathbf{Pos}_2$(*mnenie* 'opinion') = *položitel'noe* 'positive', and $\mathbf{AntiPos}_2$(*mnenie* 'opinion') = *otricatel'noe* 'negative'.

31. $\mathbf{Adv}_i$ - determining property of an action by the *i*-th participant of a situation according to his role in the situation: $\mathbf{Adv}_1$(*slëzy* 'tears') = *so* [*slezami*] 'with [tears]'; $\mathbf{Adv}_1$(*skorost'* 'speed') = *so skorost'ju...* 'at a speed of...' [cf. *mčat'sja so skorost'ju...* 'tear along at a ... speed']; $\mathbf{Adv}_2$(*somnevat'sja* 'doubt') = *vrjad li* 'hardly'.

32-34. $\mathbf{Loc}_{in}$, $\mathbf{Loc}_{ab}$, $\mathbf{Loc}_{ad}$ - preposition governing *W* [= the name of the situation] and designating a type of localization in space with the respective meaning - position, moving away, moving toward. Examples: $\mathbf{Loc}_{in}$(*vysota* 'height') = *na* [*vysote*] 'at [a height]'; $\mathbf{Loc}_{ad}$(*vysota* 'height') = *na* [*vysotu*] 'to [a height]'; $\mathbf{Loc}_{ab}$(*vysota* 'height') = *s* [*vysoty*] 'from [a height]'.

35. $\mathbf{Loc}^{temp}_{in}$ - a preposition [analogous to **Loc**] with the meaning of temporal location: $\mathbf{Loc}^{temp}_{in}$(*arest* 'arrest') = *pri* [*areste*] 'while being [arrested]'; $\mathbf{Loc}^{temp}_{in}$(*analiz* 'analysis') = *v xode* [*analiza*] 'in the course of [analysis]'.

36. **Instr** - a preposition [analogous to **Loc**] with the meaning of instrumentality: **Instr**(*pistolet* 'pistol') = *iz* [*pistoleta*], lit. 'with [a pistol]'; **Instr**(*mašinka* 'typewriter') = *na* [*mašinke*] 'on [a typewriter]'.

37. **Propt** - a preposition with the meaning 'because of', 'as the result of': **Propt**(*strax* 'fear') = *ot* [*straxa*], *so* [*straxu*] 'from [fear]'; **Propt**(*ljubov'* 'love') = *iz* [*ljubvi k...*] 'because of [one's love of...]'; **Propt**(*opyt I.1* 'experience') = *na* [*svoëm opyte*] 'from [one's own experience]'.

38. **Copul** - a copula: **Copul**(*učitel'* 'teacher') = *byt'*, *rabotat'* [*učitelem*] 'be, work as [a teacher]'; **Copul**(*primer* 'example') = *byt'*, *javljat'sja*, *služit'* [*primerom*] 'be, represent, serve as [an example]'.

39. **Pred** - a verb meaning 'be *W*', i.e. semantically covering the syntactic combination of a **Copul**(*W*) with *W*. Thus **Pred** is nothing but a 'fused' expression of **Copul**(*W*) + *W* (on 'fused' expressions see below) needed for the convenience of some synonymic transformations. For example, **Pred**(*pjanica* 'drunkard') = *pjanstvovat'* 'drink', **Pred**(*rjadom* 'next to') = *sosedstvovat'* '(to) neighbor'.

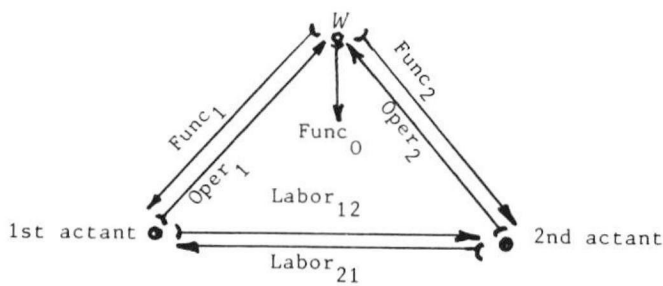
The next three LF's are verbs which are semantically empty in the context of the entry lexeme (= their key word) and which serve to link, on the syntactic level, the name of a participant of a situation to *W* - the name of the situation itself. They play important semantico-syntactic roles and can be loosely called semi-auxiliaries.

40. **Oper**$_i$ - the first deep actant (and the surface subject) of this verb is the *i*-th participant of the situation, and the second deep actant (or the first surface object) is *W* (further actants, if any, designate further participants of the situation); **Oper**$_1$ (*slëzy* 'tears') = *lit'*, *prolivat'* 'shed'; **Oper**$_1$(*arest* 'arrest') = *proizvodit'* 'make [an arrest]'; **Oper**$_2$(*arest* 'arrest') = *popadat'* [*pod arest*] 'fall [under arrest]', *podvergat'sja* [*arestu*] 'undergo [arrest]'; **Oper**$_1$(*soprotivlenie* 'resistance') = *okazyvat'* 'show, put up'; **Oper**$_2$(*soprotivlenie* 'resistance') = *vstrečat'* 'meet', *natalkivat'sja* [*na soprotivlenie*] 'run [into resistance]'.

41. **Func**$_i$ - the first deep actant (and the surface subject) of this verb is *W* - the name of the situation, and the second deep actant (and the first surface object), the *i*-th participant of the situation: **Func**$_1$(*udivlenie* 'surprise, astonishment') = *oxvatyvat'*, lit. 'seize' [i.e. the person is overcome by surprise, astonishment], **Func**$_2$(*temperatura* 'temperature') = *ravnjat'sja* 'be equal to'; **Func**$_1$(*predloženie* 'proposal') = *isxodit'* [*ot kogo-l.*] 'stem from, come from [someone]'; **Func**$_2$(*predloženie* 'proposal') = *kasat'sja* [*čego-l.*] 'concern [something]'. If there is no complement at all, i.e. **Func** is an intransitive verb, the subscript 0 is used: **Func**$_0$(*dožd'* 'rain') = *idti*, lit. 'walk' [cf. Engl. *fall*].

42. **Labor**$_{ij}$ - the first deep actant (and the surface subject) of the verb is the *i*-th participant of the situation, the second deep actant, the *j*-th participant of the situation, and the third deep actant (implemented by the second surface object) is *W* itself. Examples: **Labor**$_{12}$(*dopros* 'interrogation') = *podvergat'* [*kogo-l. doprosu*] 'subject [someone to an interrogation]'; **Labor**$_{32}$(*arenda* 'lease') = *sdavat'* [*čto-l. v arendu*] 'grant [something on lease]'.

Oper, **Func**, and **Labor** can be paired in converse relations, that is, **Oper**$_1$ = **Conv**$_{21}$(**Func**$_1$); **Labor**$_{12}$ = **Conv**$_{132}$(**Oper**$_1$), and so on. These relationships may be diagrammed as follows:

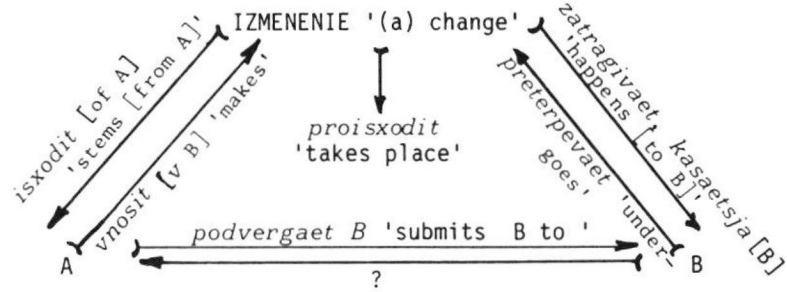


Here, a two-participant situation designated by key word *W* is presented. Arrows represent semi-auxiliary verbs; the arrow's tail indicates the surface (grammatical) subject, the head pointing toward the first surface object.

A different way to express the same idea is by using a matrix:

Surface-syntactic roles / Semi-auxiliary verbs	Surface subject	First surface object	Second surface object
$Oper_{1/2}$	1st/2nd deep actant of *W*	*W*	—
$Func_{0/1/2/}$	*W*	none/1st/2nd deep actant of *W*	—
$Labor_{12/21}$	1st/2nd deep actant of *W*	2nd/1st deep actant of *W*	*W*

For instance, for 'A changes B' (in Russian) we have :



Now we return to the survey of LF's.

43. **Involv** - a verb that links a non-participant of a situation with the name of the situation acting on him: **Conv**$_{21}$**Involv**(*veter* 'wind') = *stojat'* [*na vetru*] 'stand [in the wind]'; **IncepInvolv**(*metel'* 'snowstorm') = *zastigat'* 'catch'; **A**$_2$**Involv**(*metel'* 'snowstorm') = *v* [*meteli*] 'in [a snowstorm]'.

44-46. The following three LF's represent the meanings of what are often called phasal verbs: **Incep** - 'begin'; **Cont** - 'continue'; **Fin** - 'end, cease'. They are connected by obvious semantic relationships: **Fin**(P) = **Incep**(nonP); **Cont**(P) = non**Fin**(P) = non**Incep**(nonP). **Incep, Cont** and **Fin** are used (at least in Russian) in combination with other LF's. Examples: **Oper**$_2$(*vlast'* 'power') = *naxodit'sja* [*pod vlast'ju...*] 'be [under the power of]',

IncepOper$_2$(*vlast'*) = *popadat'* [*pod vlast'...*] 'fall [under the power of]', **FinOper**$_2$(*vlast'*) = *vyxodit'* [*iz-pod vlasti*] 'get out [from under the power of]'; **ContOper**$_1$(*vlijanie* 'influence' = *soxranjat'* 'maintain', **ContOper**$_2$(*vlijanie*) = *ostavat'sja* [*pod vlijaniem...*] 'remain [under the influence of]'; **ContFunc**$_0$(*zapax* 'odor') = *deržat'sja* 'linger'.

47. **Caus** - 'cause', 'do something so that a situation occurs'. **Caus** is often used in combination with other verbal LF's. Examples: **CausOper**$_1$(*mnenie* 'opinion') = *privodit'* [*kogo-l. k mneniju*] 'lead [someone to an opinion]'; **CausFunc**$_1$(*nadeždа* 'hope') = *vseljat'*, *vdoxnut'* [*nadeždu v kogo-l.*] 'raise [hope in someone], inspire [someone with hope]'; **CausOper**$_2$(*obed* 'dinner') = *gotovit'* [*čto-l. na obed*] 'prepare [something for dinner]'; **CausFunc**$_0$(*obed*) = *gotovit'*, *strjapat'* [*obed*] 'make, cook [the dinner]'.

With the LF **Caus**, the LF's **Perm** and **Liqu** are naturally associated:

Liqu(P) = **Caus**(nonP), **Perm**(P) = non**Liqu**(P) = non**Caus**(nonP).

Both **Perm** and **Liqu** are usually used in combination other verbal LF's.

48. **Perm** - 'permit', 'allow': non**PermOper**$_2$(*kritika* 'criticism') = *ograždat'* [*kogo-l. ot kritiki*] 'protect [someone from criticism]'; **PermOper**$_2$(*èkzamen* 'exam') = *dopuskat'* [*kogo-l. k èkzamenu*] 'allow [someone to (take) an exam]'.

49. **Liqu** - 'liquidate', 'do something so that a situation does not occur or stops occurring': **LiquFunc**$_0$(*negramotnost'* 'illiteracy') = *pokončit'* [*s negramotnost'ju*] 'wipe out illiteracy'; **Liqu**$_1$**Func**$_0$(*kostër* 'campfire') = *potušit'* [*kostër*] 'extinguish [a campfire]'.

50-52. Now let us look at another triple of interrelated LF's: **Real**$_i$, **Fact**$_i$ and **Labreal**$_{ij}$.

The LF's **Real**$_i$, **Fact**$_i$, and **Labreal**$_{ij}$ are syntactically analogous to the functions **Oper**$_i$, **Func**$_i$ and **Labor**$_{ij}$, respectively. This means that the names of the situation and of its i-th participant fulfill with respect, e.g., to **Real**$_i$ the same syntactic roles as they do with respect to **Oper**$_i$; etc. However, unlike the "empty" LF's **Oper**$_i$, **Func**$_i$, and **Labor**$_{ij}$, the lexical functions which we are now concerned with correspond to a specific meaning - 'fulfill a demand or requirement of...'. The demands can differ for different *W*'s. For example, the fulfillment, or realization, of a hypothesis is its confirmation; therefore, **Real**$_2$(*gipoteza* 'hypothesis') = *podtverždat'* 'confirm' [*Fakty podtverždajut gipotezu* 'The facts confirm the hypothesis'], and **Fact**$_2$(*gipoteza* 'hypothesis') = *sootvetstvovat'* 'be in accordance with' [*Gipoteza sootvetsvuet faktam* 'The hypothesis is in accordance with the facts']. Realization of an artifact is its utilization according to its intended function; therefore, **Fact**$_0$(*nož* 'knife') = *rezat'* 'cut' [*Ètot nož režet xorošo* 'This knife cuts well']. Further examples:[7]

Real$_1$(*obvinenie* 'accusation') = *dokazyvat'* [*obvinenie*] 'prove [an accusation]'; **Real**$_1$(*učebnoe zavedenie* 'educational institution') = *prepodavat'* [*v učebnom zavedenii*] 'teach [in an educational institution]'.

Real$_2$(*obvinenie*) = *soglašat'sja* [*s obvineniem*] 'agree [with

an accusation]'; **Real**$_2$(*učebnoe zavedenie*) = *izučat'sja, prepodavat'sja [v učebnom zavedenii]* 'be studied, be taught [in an educational institution]' (while **Real**$_3$(*učebnoe zavedenie*) = *učit'sja [v učebnom zavedenii]* 'study [in an educational institution]'); **Real**$_2$(*soblazn* 'temptation') = *poddavat'sja [soblaznu]* 'yield [to temptation]'.

Fact$_0$(*somnenie* 'doubt') = *podtverždat'sja* 'be corroborated', *opravdyvat'sja* 'prove justified'; **Fact**$_0$(*nadežda* 'hope') = *sbyvat'sja* 'come true'; **Fact**$_0$(*sudno* 'ship') = *plyt'* 'sail'.

Fact$_1$(*očered'* 'turn') = *byt'* [*za kem-l.*] 'be [someone's (turn)]' [*Očered' za vami* 'It's your turn']; **Fact**$_1$(*èksperiment* 'experiment') = *udavat'sja* [*komu-l.*] 'work out [for someone]'.

Fact$_2$(*sudno*^{1} 'ship') = *vezti, perevozit'* [*gruzy, passažirov*] 'convey, transport [cargo, passengers]'; **Fact**$_2$(*sosud* 'container') = *soderžat'* [*čto-l.*] 'contain [something]'.

Labreal$_{12}$(*viselica* 'gallows') = *vzdernut'* [*kogo-l. na viselicu*] 'string up [someone on a gallows]'; **Labreal**$_{12}$(*obed* 'dinner') = *est'* [*čto-l. na obed*] 'eat [something for dinner]'.

The LF's **Real**$_i$, **Fact**$_i$ and **Labreal**$_{ij}$ are superscripted with Roman numerals to indicate the degree of the realization or fulfillment: the superscript I means fulfillment only at the psychological level, with the superscript II meaning fulfillment at the physical level, cf. **Real**$_2^{I}$(*priglašenie* 'invitation') = *prinimat'* 'accept', while **Real**$_2^{II}$(*priglašenie*) = *sledovat'* 'follow'; or **Fact**$_1^{I}$(*čuvstvo* 'emotion') = *govorit', podskazyvat'* 'tell', while **Fact**$_1^{II}$(*čuvstvo*) = *zastavljat'* 'force'.

53. **Manif** - 'manifest itself', 'become apparent': **Manif**(*vina* 'guilt', 'fault') = *obnaruživat'sja* 'become apparent'; **Manif**(*udivlenie* 'amazement') = *skvozit'* 'lurk'; **Manif**(*bezgramotnost'* 'ignorance') = *projavljat'sja* 'manifest itself'.

54. **Sympt** - 'symptom', i.e. a verbal expression denoting a bodily reaction that is the symptom of an emotional or physical state; in contrast to all other LF's, **Sympt** is a two-argument lexical function: **Sympt**(*udivlenie* 'amazement', *glaza* 'eyes') = [*U nego*] *glaza na lob polezli* '[His] eyes started from his face'; **Sympt**(*udivlenie* 'amazement', *rot* 'mouth') = *razinut' rot* 'open [one's] mouth wide'; **Sympt**(*strax* 'fear', *volosy* 'hair') = [*U nego*] *volosy vstali dybom* '[His] hair stood on end'.

55. **Prepar** - 'prepare', 'get (something) ready for normal use or functioning': **Prepar**^{I}**Fact**$_0$(*revolver* 'gun') = *zarjažat'* 'load'; **Prepar**^{II}**Fact**$_0$(*revolver*) = *vzvodit' kurok* 'raise the cock'. Roman superscripts, in much the same manner as with **Real**$_i$, **Fact**$_i$ and **Labreal**$_{ij}$, express the degree of readiness. Compare also: **PreparOper**$_1$(*obed* 'dinner') = *vyxodit'* [*k obedu*] 'appear [for dinner]'; **PreparOper**$_2$(*obed*) = *podavat'* [*na obed*] 'serve [something for dinner]'; **PreparFunc**$_1$(*obed*) = *podavat'* [*obed komu-l.*] 'serve [somebody dinner]'.

56. **Prox** - 'be about to / on the verge of': **ProxOper**$_1$(*otčajanie* 'despair') = *byt' na grani* [*otčajanija*] 'be on the edge of [despair]'; **ProxFunc**$_0$(*groza* 'thunderstorm') = *sobirat'sja* 'gather, brew'.

57. **Degrad** - 'degrade', 'become worse or bad': **Degrad**(*moloko* 'milk') = *skisnut'* 'go sour'; **Degrad**(*mjaso* 'meat') = *isportit'sja*, *protuxnut'* 'go bad'; **Degrad**(*disciplina* 'discipline') = *rassatat'sja* 'decay'.

58. **Son** - 'emit characteristic sound': **Son**(*sobaka* 'dog') = *lajat'* 'bark'; **Son**(*banknoty* 'banknotes') = *xrustet'* 'rustle'; **Son**(*sneg* 'snow') = *skripet'* 'crunch'; **Son**(*vodopad* 'waterfall') = *revet'* 'roar'.

59. **Imper** - 'do W!': **Imper**(*streljat'* 'shoot') = *ogon'*! 'fire!'; **Imper**(*brat' oružie* 'seize arms') = *v ruž'ë*! 'take up arms!'; **Imper**(*govorit' tixo* 'speak lowly') = *ts-s-s*!, *tš-š-š*! 'sh-h-h!'; **Imper**(*brat'* 'take') = *na(te)*! 'take it!', 'here!'.

60. **Perf** - 'perfective', i.e. 'have the process carried through to its natural limit': **Perf**(*vstavat'* 'be standing up') = *vstat'* 'have stood up'; **Perf**(*rešat'* 'be solving [a problem]') = *rešit'* 'have [it] solved'.

61. **Imperf** - 'imperfective', i.e. 'be carrying out the process': **Imperf**(*vstat'*) = *vstavat'*; **Imperf**(*rešit'*) = *rešat'*.

62. **Result** - 'resultative', i.e. 'the state of affairs that normally results from the completion of the process': **Result**(*pokupat'* 'buy') = *imet'* 'have'; **Result**(*ložit'sja* 'lay down') = *ležat'* 'be lying'; **Result**(*naučit'sja* 'have learnt') = *umet'* 'know', 'have necessary skills'.

Along with the LF's listed, two further types of LF's are extensively used in the Explanatory Combinatorial Dictionary: non-standard and compound LF's.

A non-standard LF is a meaning that is idiomatically expressed depending on a key word but that has either a strongly limited semantic combinability or a fairly limited range of expressions, or both. In other words, it is too specific, too particular to be granted the status of a standard LF. Non-standard LF's are written in standardized natural language. Some examples:

such that Y is confined to his home(*arest* 'arrest') = *domašnij* 'house-' [*arest*];

such that it is the result of a loss at cards that was not immediately paid(*dolg* 'debt') = *kartočnyj* 'card' [*dolg*], obsolete [*dolg*] *česti* '[debt] of honor';

during a short time and/or non-intensively (with the purpose of knowing Y somewhat better) (*učit'sja* 'learn') = *// poduč'it'sja* 'learn a bit (of something)'.

A compound LF is a combination of syntactically related simple LF's that has a unique lexical expression covering the meaning of the combination as a whole. I have presented numerous examples of compound LF's above; let me give some more illustrations, with the key word printed in boldface:

AntiMagn : *židkie* **aplodismenty** 'thin (lit. 'liquid') applause', *slabye* **dovody** 'weak arguments', *nizkaja*

temperatura 'low temperature', *neznačitel'nye* **poteri** 'negligible losses',...

AntiVer : *ložnyj* **styd** 'false shame', *lživoe* **obeščanie** 'false (lit. 'lying') promise', *ošibočnoe* **predstavlenie** 'a wrong conception', *bezosnovatel'nye* **opasenija** 'unfounded misgivings/fears',...

$\textbf{IncepOper}_1$: *priobretat'* **populjarnost'** 'acquire popularity', *vpadat' v* **otčajanie** 'sink into despair', *vstavat' na put'* **predatel'stva** 'take the path of treason', *perexodit' v* **pike** 'go into a dive [as of an aircraft]',...

$\textbf{CausOper}_2$: *sdavat' v* **ėkspluataciju** 'put into operation', *vvergat' v* **rabstvo** 'plunge into slavery', *stavit' pod* **kontrol** 'put under control',...

$\textbf{AntiReal}_2$: *provalit'sja na* **ėkzamene** 'fail an examination', *otvergat'* **sovet** 'reject a piece of advice', *otklonjat'* **xodatajstvo** 'turn down an application'.

The following four remarks bearing on all LF's are in order:

1) An LF may have a fused expression, i.e. a lexical unit that does not include the key word but covers both the meaning of the function itself and that of its argument (= key word). The fusion is shown by the symbol // separating all the fused values (on its right) from all the non-fused ones. For example:

Magn(*dožd'* 'rain') = *prolivnoj* 'heavy' // *liven'* 'shower' [i.e. *liven'* = *prolivnoj dožd'*; cf. Engl. *downpour* = *heavy rain*].

Magn(*vkusno* 'delicious') = *očen'* 'very' // *pal'čiki obližeš'*, lit. 'You'll lick your fingers' [*pal'čiki obližeš'* = *očen' vkusno*]; and the like.

2) Several LF's simultaneously having the same key word but being syntactically not linked to one another may be expressed by one lexical unit covering the meanings of all the LF's involved. This is what we call configuration of LF's (as opposed to compound LF's, in which all the constituent simple LF's are syntactically linked). In a configuration of LF's, the "+" sign is used to separate the constituents. For example, in the entry SUD'BA 1 'fate, destiny' the notation

$\textbf{Fact}_3^{\text{II}}$ + $\textbf{AntiBon}_2$: *presledovat'* 'persecute'

means that fate really affects [=$\textbf{Fact}_3^{\text{II}}$] the person in question (the defendent, so to speak) and its verdict is bad [=$\textbf{AntiBon}_2$]. Two further examples:

$\textbf{A}_1$(*vosxiščenie* 'delight') + **Magn**(*vosxiščenie*) = *preispolnennyj* [*vosxiščenija*] 'full [of delight]';

$\textbf{Oper}_1$(*otčajanie* 'despair') + **Magn**(*otčajanie*) = *byt' vo vlasti* [*otčajanija*] 'be completely in [despair]'.

3) Some LF's (most often, **Magn** or $\textbf{Real}_i$ with the latter's

relatives, **Fact** and **Labreal**) may be subscripted with a semantic component of the key-word's definition (in square brackets) to indicate that the meaning of this LF interacts with exactly this component of the key-word's meaning. Thus:

Labreal$_{12['xranit''\ 'keep']}$(*pamjat'* 'computer memory') = *xranit'* [*v pamjati*] 'store [in memory]';
Labreal$_{12['vydavat''\ 'output']}$(*pamjat'*) = *izvlekat'* [*iz pamjati*] 'extract [from the memory]';
Magn$_{['bojat'sja'\ 'be\ afraid']}$(*strax*^{1} 'fear') = *dikij* 'wild', *žutkij* 'terrible';
Magn$_{['terjat'\ samokontrol''...'lose...self\text{-}control']}$(*strax*^{1}) = *paničeskij* 'panic [adj.]', *životnyj* 'animal';
AntiVer$_{['poražat''\ 'hit']}$(*streljat'*^{1} 'shoot') = *ploxo* 'badly', *skverno* 'poorly',...;
AntiVer$_{['cel''\ 'target']}$(*streljat'*^{1}) = *v vozdux* 'into the air'.

4) Furthermore, some LF's may be superscripted with semantic labels, like 'usual', 'loc(ation)', 'temp(oral)', 'quant(itative)', to make their meaning more precise:

Magn^{temp}(*opyt* 'experience') = *dlitel'nyj* 'long';
Magn^{quant}(*opyt* 'experience') = *bol'šoj* 'considerable'.

In concluding this survey of LF's, we would like once again to call attention to the fact that they are used for two main purposes:

- for the description of idiomatic or restricted lexical co-occurrence or derivation relations; and
- for specifying universal synonymic transformations of utterances on the deep-syntactic level. It is clear, for example, that, in any language, (18) holds:

(18) W = **Oper**$_1 \xrightarrow{2} \mathbf{S_0}(W)$ = **Oper**$_2 \xrightarrow{2} \mathbf{S_0}(W)$ = **Func**$_1 \xrightarrow{1} \mathbf{S_0}(W)$ = **Func**$_2 \xrightarrow{1} \mathbf{S_0}(W)$ = **Labor**$_{12} \xrightarrow{3} \mathbf{S_0}(W)$; and so on.

[Numbers on the arrows stand for deep-syntactic actants: e.g., the key word of an **Oper** it its second deep actanct, etc.]

The transformations presented in (18) can be exemplified as follows:

(19) *vlijat'* '(to) influence' = *okazyvat'* [=**Oper**$_1$] *vlijanie* [= **S**$_0$] 'have influence' = *byt'*, *naxodit'sja* [= **Oper**$_2$] *pod vlijaniem* 'be under influence', etc.

Compare (20):

(20) *Ivan durno vlijaet na Petra* 'Ivan influences Peter in a bad manner' = *Ivan okazyvaet na Petra durnoe vlijanie* 'Ivan has a bad influence on Peter' = *Pëtr naxoditsja pod durnym vlijaniem Ivana* 'Peter is under the bad influence of Ivan'.

Rules of type (18) allow one to establish a paraphrasing system for synonymic transformations of sentences and/or discourses. Such a system can automatically produce, for any given text, a set of its synonymous or nearly-synonymous paraphrases. It also can automatically derive, for a set of synonymous texts, a canonical invariant.

Two Sample Dictionary Entries. In order to give the reader the full taste of an ECD, we will quote two dictionary entries, one Russian and one French (respectively, from Mel'čuk and Zholkovsky 1984: 651-653 and Mel'čuk *et al.* 1984: 148-149). These are the lexemes PREDLOŽENIE^{1} 1a,b and PROPOSITION^{1} 1, both meaning roughly 'proposal' = 'the act of proposing or what is being proposed' and being approximate equivalents under translation.

The entries are reproduced here with slight modifications aimed at facilitating comparison. Since we address ourselves to an English-speaking audience, both actual metalanguages (Russian and French) have been replaced by English. We are not in a position to explain all the details of presentation; but we hope they will become clear in due course.

Russ. PREDLOŽENI|E^{1}, *ja*, *ja*, neuter

1a,1b. *Predloženie X-a* [*Z-u*] *delat' Y* 'Proposal by X [to Z] to do Y' = 'What is (being) proposed by X to Z' [= S_2(*predlagat' 1a,1b* or *predložit' 1a,1b*].

Government Pattern

1 = X	2 = Y	3 = Z
1. N_{gen}	1. N_{gen}	
2. *ot* N_{gen}	2. V_{inf}	—
3. A_{poss}	3. *čtoby* + PROPOS	
4. A		

1) $C_{1.2}$: only with LF **Result**$_3$ and **Conv**$_{21}$**Result**$_3$

2) $C_{1.4}$: A = A_o(N), where N is the name of a country

3) $C_{2.1}$: only for PREDLOŽENIE[1] 1a; N is a predicate

4) $C_{1.1} + C_{2.1}$: impossible

C_1 : *predloženie Petra* ⟨*Francii*⟩ 'proposal by Peter ⟨France⟩', [*Ja imeju*] *predloženie ot direktora* '[I have] a proposal from the director', *naši* ⟨*francuzskie*⟩ *predloženija* 'our ⟨French⟩ proposals'

C_2 : *predloženie mira* ⟨*pomošči*⟩ 'offer of peace ⟨help⟩', *predloženie otdoxnut'* ⟨ *čtoby my otdoxnuli* ⟩ 'proposal to rest ⟨that we have a rest⟩';

$C_1 + C_2$: *amerikanskoe predloženie pomošči* 'American offer of help', *predloženie brigadira otdoxnut'* ⟨ *čtoby my otdoxnuli* ⟩ 'the proposal by the brigade chief to rest ⟨that we have a rest⟩'

Impossible: **Menja tronulo predloženie pomošči ot Koli* 'I was moved by the offer to help from Kolya' (1) [= *Menja tronulo Kolino predloženie pomošči*; but cf. *U menja est'* [= $\mathbf{Conv}_{21}\mathbf{Result}_3$] *predloženie pomošči ot Koli* 'I have an offer of help from Kolya'];
**moskovskoe predloženie* 'Moscow proposal' (2);
**predloženie otdyxa* ⟨*knigi*⟩ 'proposal/offer of rest ⟨of a book⟩' (3);
**predloženie Peti pomošči* 'offer of help by Pete' (4)

Lexical Functions

V_o : predlagat' 1a,b, predložit' 1a,b 'propose, offer'

Magn : nastojčivoe 'insistent'

$Magn^{quant}$: neodnokratnye | P. is in pl 'multiple'

AntiMagn : robkoe 'timid', ostorožnoe 'cautious'

Ver_1 : ser'ëznoe 'serious'

$AntiVer_1$: legkomyslennoe 'flippant', neobdumannoe 'unthoughtful'

Bon_1 : ljubeznoe 'amiable'

Bon_2 : vygodnoe 'advantageous'

$Magn + AntiBon_1$: nazojlivoe 'inportunate'

$Oper_1$(P. $\xrightarrow{2}$ become the wife of X) : delat' 'make' [~e N_{dat}]

F_1=$Oper_1$+the same as P.' of W : prisoedinjat'sja 'join' [k ~ju N_{gen}=W] | either $C_1 \neq \Lambda$, or P. has an identifying modifier

$PerfIncepOper_3$: polučit' 'receive' [~e (ot 'from' N_{gen})]

$ContFunc_0$: ostavat'sja v sile 'still hold'

$Liqu_1Func_0$: brat' obratno 'take back' [(svoë) ~e]

$Func_1$: isxodit' 'come' [ot 'from' N_{gen}]

$PerfFunc_1$: **offic** posledovat' 'follow' [so storony 'from the side of' N_{gen}] | P. cannot have a **Magn**

$Func_2$: sostojat', zaključat'sja 'consist' [v 'in' N_{prep}]

⋮

Examples

Ona otvetila otkazom na ego robkoe predloženie pomoč' ej 'She answered with a refusal to his shy proposal to help her'. *Po predloženiju xozjajki my ostalis' ešče na dva dnja* 'Following the proposal of the lady of the house, we stayed two more days'.

Fr. PROPOSITION[1], feminine

1. *Proposition de X à Z de Y* 'Proposal by X to Z to do Y' = 'Fact that X proposes Y to Z or the message concerning Y by means of which X proposes Y to Z' [$=S_0/S_2$ (*propeser 1*)]

Government Pattern

1 = X	2 = Y	3 = Z
1. *de* N	1. *de* N	1. *à* N
2. A_{poss}	2. *de* V_{inf}	
3. A	3. *que* $PROP_{subj}$	

1) $C_{1.3}$: A = A_0(N), where N is the name of a country, or N = *patron, gouvernement,...*

2) $C_{2.3}$: $M_1 = M_1(Y)$

3) C_3 without C_1 or C_2 : not desirable

C_1 : *la proposition de Pierre* ⟨*de la France*⟩ 'proposal by Peter ⟨France⟩', *notre proposition* 'our proposal', *les proposition françaises* 'French proposals'

C_2 : *la proposition de paix* ⟨*d'aide*⟩ 'proposal of peace ⟨help⟩', *la proposition d'apporter de l'aide* 'proposal to give some help', *la proposition que son valet fasse cela* 'proposal that his servant do that'

$C_1 + C_2 + C_3$: *sa proposition* ⟨*la proposition française*⟩ *de travail à Marie* 'his ⟨French⟩ proposal of work to Mary', *sa proposition* ⟨*la proposition française*⟩ *à Marie de participer au tournoi* 'his ⟨French⟩ proposal to Mary to participate at the tournament', *la proposition d'argent de Pierre à Marie* 'proposal of money by Peter to Mary'

Not desirable : ?*la proposition à Marie* (3) [= *la proposition faite à Marie* 'the proposal made to Mary']

Lexical Functions

$Syn_{\subseteq}$: offre 'offer'

V_0 : proposer 1 'propose'

Ver_1 : sérieuse 'serious'

$AntiVer_1$: à la légère 'lighthearted'

Bon_1 : amicale 'friendly'

Bon_2 : avantageuse 'advantageous', intéressante 'interesting'

$Oper_1$: faire 'make' [ART ~]

$ProxOper_1$: avoir 'have' [ART ~ (à $Oper_1$)] [*J'ai une proposition (à faire)* 'I have a proposition (to make)']

$ContOper_1$: maintenir 'maintain' [ART ~]

$Oper_3$: recevoir 'receive' [ART ~]

$ResultOper_3$: avoir 'have' [ART ~] [*J'ai une proposition avantageuse* 'I have an advantageous proposal']

$ContFunc_0$: tenir encore ⟨toujours⟩ 'still hold'

$Liqu_1Func_0$: retirer 'take back' [ART ~], revenir 'take back' [sur ART ~]

$Func_1$: venir 'come' [de N]

$Func_2$: consister 'consist' [en N]

$Func_3$: s'adresser 'be adressed' [à N]

⋮

Examples

Bien qu'officiellement acceptée, ma proposition est restée lettre morte 'Although officially accepted, my proposal went unheeded'. *Il accueillit ma proposition d'aide avec joie* ⟨*froidement*⟩ 'He received my proposal/offer of help joyfully ⟨coldly⟩'.

ACKNOWLEDGMENTS

I am happy to express my heartfelt gratitude to Lidija Iordanskaja, who, as always, was the first to read the text of my paper and suggest many important corrections and improvements. Ingrid Meyer and James Steele kindly accepted to revise my English; and last but not least, I thank Adam and Valerie Makkai, who invited me as a keynote speaker to the XIIth LACUS Meeting and thus encouraged me to write this paper.

APPENDIX

For the benefit of English readers, we will add here an English lexical entry written by James Steele (Carleton University). This is the first sense of the noun HOPE II (HOPE I being the verb).

II. HOPE, noun

1. *X's hope of Y* = S_0 (*hope I.1*).

N.B. The plural [~s] can be used in a singular sense in $C_{2.3}$ and, if N is singular, in $C_{2.1,2.2}$ [*His hopes* ⟨=*hope*⟩ *of winning the lottery prize died when his number was not drawn; He bought ten tickets for the lottery in hopes* ⟨=*hope*⟩ *of winning the prize*].

Government Pattern

1 = X	2 = Y
1. *of* N	1. *for* N
2. A_{poss}	2. *of* N
	3. *to* V_{inf}
	4. *that* PROP

1) $C_{1.1} + C_{2.2}$: not desirable

C_1 : *the hope of Peter, his hope*

C_2 : *hope for*⟨*of*⟩ *victory*⟨*to win a victory*⟩, *hope that victory would be won*

$C_1 + C_2$: *the hope of Peter* ⟨*his hope*⟩ *for success* [*in the light of this event*], *his hope of success, the hope of Peter* ⟨*his hope*⟩ *that success would be achieved, the hope of Peter* ⟨*his hope*⟩ *to be a success*

Not desirable : ?*the hope of Peter of success* (1)

Lexical Functions

$Syn_{\supset}$	: desire; expectation
$Syn_{\cap}$	: wish, aspiration, dream; faith; confidence; optimism
Contr	: fear
Anti	: despair
$Anti_{\cap}$	: doubt; fear, dread
Gener	: feeling, sense [of ~]
Figur	: light [of ~]
temporarily Magn + Figur	: burst, wave, surge, upsurge [of ~] | H. in singular
AntiMagn + Figur	: spark, flash, glimmer, gleam, ray, beam [of ~]; breath [of ~]; grain, seed [of ~] | H. in singular; shade, shadow [of ~], shadow [of a ~] | H. in singular; these expressions are frequently used in negative constructions [*The search party continued to look for the lost child without a shadow of hope that the little creature would be found alive*]
Incep + Figur	: door [of ~] | H. in singular
$CausFunc_0$ + Figur	: open [ART] door [of ~] | H. in singular
Magn + A_1	: full [of ~], filled [with ~] | H. in singular
$nonA_1$	: void, devoid [of ~], without [ ]; **lit** or **arch** out [of ~] [*The old king was out of hope when he learned of the disaster*]
V_0	: hope I.1
Culm	: pinnacle, height [of ~] | H. in singular
$Magn_{['desire']}$	: big 1 [= 'intense'], strong great 1 [= 'beyond the ordinary in strength'], high 1 [= 'intense to an extraordinary degree'] [*Their great hope for an early settlement did not materialize*]; dear, earnest, passionate, profound, sincere; eager, lively < ardent, exultant, fervent, intense

$Magn_{['probability']}$: certain, confident, firm, undoubted; **lit** and **arch** absolute | G = $Oper_1$

$AntiMagn_{['probability']}$: doubtful, faint, feeble, forlorn 1 [= 'weak'], little, scant, slim, small, unsure

expressed cautiously
+ AntiMagn : cautious [*The cautious hope of the Minister of Finance was that new fiscal measures would bring an end to the recession*]

$Magn_1$: boundless, unbounded, unconfined

$Magn_1^{quant}$: common, general universal

$AntiMagn_1$: humble

$Magn_2$: big 2 [= 'important'], bright; great 2 [= 'pre-eminent'], high 2 [= 'of exalted importance'], monumental, utmost [*To reach the moon in a single-stage rocket was their big hope*]

the surest means of achieving Y +
$Magn_{2['probability']}$: best

Bon : fair, good, pleasant, pleasing, sweet

Ver : real, substantial

AntiVer : blind, drunken, deluding, empty, fallacious, false, fantastic, fond, futile, idle, illusory, naive, mad, spurious, unfounded, insubstantial, vain; fallible; **lit** airy, **lit** cozening, **lit** beguiling, **lit** bastard

$Magn_{['desire']}$ + AntiVer : wild

Adv_1 : in, with [~] [*He attended the ball in hope of meeting her*] // hopefully

$nonAdv_1$: without [~] [*The little children wandered hopelessly in the dark forest*]; without [ART ~] | $C_2 \neq \Lambda$ [*He continued his work but without a hope of completing it*] // hopelessly 1

$Adv_2Manif \xrightarrow{1} nonFunc_0$: hopelessly 2 [*He shook his head hopelessly*]

Propt : out of [~ for], in [~ of] | $C_2 \neq \Lambda$ [*She cherished his picture out of hope for his return*]

IncepPredPlus : expand 1, go up, grow, increase 1, rise, warm 1 [*The rescuers' hope grew* <*rose*> *when they heard that the storm was subsiding*]

A_1IncepPredPlus : budding

CausPredPlus : build up, bolster, encourage, expand 2, foster, increase 2, strengthen, spur, warm 2 [Ø/ART ~] [*Do not allow an initial success to build up your hopes*]; **coll** get up [A_{poss} ~] [*Do not get up your hopes too soon*]

IncepPredPlus$_1^{quant}$: spread 1 [among N] [*Hope spread among the starving villagers when rain clouds appeared on the horizon*]

CausPredPlus^{quant} : expand 2, increase 2, spread 2 [Ø/ART ~] [*The good news spread hope among the inhabitants*]

IncepPredMinus : diminish 1, dwindle, lessen 1, sink 1, weaken [*Their hopes diminished when they took this new consideration into account*]; cool 1, cloud 1, darken 1, dim 1, fade, fail 1 [= 'become weaker'], go down, shrink 1, wither 1 [*Hopes faded after the defeat of their best regiment*]

CausPredMinus : cool 2, cloud 2, dampen, darken 2, daunt, dim 2, diminish 2, lessen 2, shrink 2, sink 2, weaken 2, wither 2, undermine [Ø/ART ~] [*The injury of their best player cooled their hope of winning the game*]

$Oper_1$: entertain, experience, feel, have, possess [Ø/ART ~]

AntiVer + $Oper_1$: indulge [ART ~] | $C_2 \neq \Lambda$

Plus + $Oper_1$: gain [~]

IncepOper$_1$: find [~]

ContOper$_1$: live [in ~]; live, rest [in the ~] | $C_2 \neq \Lambda$ [*You must live in hope even though the odds are against you*]

Caus$_1$ContOper$_1$: cling [to Ø/ART ~]

FinOper$_1$: lose [Ø/ART ~]

temporarily FinOper$_1$: defer, put off [~]

CausOper$_1$: inspire [N with ~]

$LiquOper_1$: cheat [N of ART ~]

$Able_2Oper_1$: of [~] | H. in singular [*a child of great hope; a country of hope*]

$PermContFunc_0$: leave [~]

$Caus_1ContFunc_0$: nurse, cherish, harbour, sustain 1 [= 'keep going continuously'], [ART ~] | C_2 = Λ [*Their generation nursed the hope of a promised land*]

$FinFunc_0$: collapse, die, disappear, end 1, fail 2 [= 'cease'], perish, vanish [*Hope for a lasting peace collapsed with the renewed fighting*]

$PerfFinFunc_0$: be gone, be finished, be extinct, be at an end; **lit** or **arch** be done; be dead [*Our hope for life on Mars is dead*]

being caused by W, $IncepFunc_{0/1}$: arise, be born [in N]

$ContFunc_{0/1}$: linger, persist, remain [in ⟨among⟩ N]

$A_1ContFunc_{0/1}$: enduring, lasting, steadfast, unfading

$CausContFunc_{0/1}$: feed, keep alive, nourish, sustain 2 [= 'give strength to'] [*Good news from the front fed the hopes of the general*]

$LiquFunc_{0/1}$: crush, demolish, destroy, wreck [~ in N]; cut off [A_{poss} ~ / ~ in ⟨among⟩ N/N from ~] | N = a person; blast, blight, break, butcher, bury, dash, end 2, dispel, drown, extinguish, kill, ruin, shatter, take away, trample [*The mother's hopes were shattered by the death of her young son*]

$IncepFunc_1$: spring [in N ⟨ in N's soul, heart, breast,...⟩]

again $IncepFunc_1$: return [to N], revive 1 [in N] [*Hope revived in her*]

$CausFunc_1$: arouse, awaken, raise [*The serious negotiations raised hopes for an early end to the strike*]; instil, plant [~ in N]; give, hold out, offer [~]

again $CausFunc_1$: restore, revive 2, reawaken, rekindle [Ø/ART ~] [*Warm weather restored the hope of the farmers*]

$Conv_{21}(CausFunc_1)$: ride [*Our hopes ride on his recent achievement*]

trying to make X perform P,
$CausFunc_1$: dangle [ART ~]

$Caus_1Func_2$: fix, set [A_{poss} ~ on N]

S_1Caus : source [of ~]

$FigurS_1Caus$: star, beacon, well-spring, bastion [of ~] | H. in singular

$Caus_1$(H. is based on Z) : base, pin, fasten, hang, lay, rest build [ART ~ on N = Z]; attach [Ø/ART ~ to N = Z]

$Liqu_1$: abandon, discard, give up, leave behind, relinguish, surrender [~]

$AntiAble_2Liqu$: unconquerable, irrepressible

refuse to $Liqu_1$: cling [to the ~] | $C_2 \neq \Lambda$

$nonA_1Perm$: past, beyond [~] [*The patient seemed beyond hope*]

$Real_1$: fulfill, realize, reach, attain [ART ~]

$Real_2$: satisfy, meet [ART ~], meet [with ART ~]

$Fact_0$: come true

$AntiFact_0$: come to nothing, fail 3 [= 'prove misleading'] [*The farmer's hope came to nothing when he was unable to develop a rust-resistant species of wheat*]

$CausFact_0$: advance, further [ART ~]

$nonPermFact_0$: defeat, disappoint, frustrate, stop [Ø/ART ~]

Magn + A_1Caus_1Manif : bright, radiant, starry-eyed, wide-eyed [with ~] // starry-eyed, wide-eyed

$Caus_1Manif$: display, show [Ø/ART ~]

by saying, $Caus_1Manif$: express [Ø/ART ~]

$nonPerm_1Manif$: hide, conceal [ART ~]

$A_2nonPerm_1Manif$: secret, silent

$Excess^{trem}$(*body*)-$Sympt_{12}$: tremble [with ~]

$Excess^{fulg}$(*eyes*, *face*)-$Sympt_{12}$: beam, glow [with ~]

CausDegrad : corrupt, spoil [ART ~]

situation P being such that there is no H. that P will change for the better : hopelessly 3 P [*He is hopelessly ill*]

live disregarding adverse facts or material necessities as if the emotional state of X constituted reality or a means of sustenance : live on [~] [*Despite a fatal diagnosis, the young man continued to live on hope; After all food was consumed; the explorers lived on hope*]

Examples

It was evident to everyone that a strong sense of hope was the guiding power in her life. A light of hope shone in their eyes when they heard the good news. There was a burst of hope at the head of the mine-shaft when the crowd heard the faint tapping of the trapped miners. Rising popularity in pre-election polls gave the new party a ray of hope. A gift of food is a door of hopo to starving people. The discovery of penicillin opened a door of hope for the wounded. The long drought closed the door of hope for the thirsty villagers. The children were full of hope after visiting Santa Claus. The young man was devoid of hope when he learned the sad fate of his brother. She was suddenly killed while at the pinnacle of hope. To feed the poor was the dear hope of the good monk. A lively hope of victory is what encouraged the competitors to do their best. Inspired by certain hope of success, the hunter continued his search. There was faint hope that the buried miners would be found alive. It is the cautious hope of the Minister of Finance that new fiscal measures will bring an end to the recession. The children had boundless hope that they would excell in the examination. The common hope was for a bountiful harvest. In such adverse circumstances, silence and prayer were their best hope. Throughout their sinful lives, they were inspired by the sweet hope of redemption. Only substantial hopes should be taken into consideration by the committee. He was always preoccupied with empty hopes. Driven to extremes by her wild hopes, she finally committed suicide. She cherished his picture out of hope for her return. When the soldier heard of the great victory at the front, his hope for an end to the war went up. The budding hopes of woman grew stronger when she received the happy letter from her friend. If you do not search for the treasure, you will not have a hope of finding it. The silly man indulged the hope that he could write a novel in three days. The sick man gained hope when he learned of the new medicine that might cure his illness. The workers found hope in their revolution. The young child clung to the hope that her dead father would come back to life. Hope for a solution to the problem must be deferred until better conditions prevail. When the radio finally went silent, the operators in the control tower lost all hope. A happy turn of events inspired the men with hope. Stormy weather cheated the fishermen of their hope for a large catch. Hope now lies in the skill of the surgeon. The great drought left little hope for a good crop. Once the oil slick was found on the surface of the water, all hope for the sub-

marine was gone. Hope for a new life was born in John after he read the Bible. Despite initial losses, hope for an early victory lingered. Winning the hand of a certain beautiful lady was the romantic gentleman's steadfast hope. The long drought destroyed the hope of the farmer for a good harvest. Lack of financial resources cut off his hopes. When the young lover walked down the path, hope was springing in his heart. After the war, hope for economic progress returned. The serious negotiations stirred hopes for an early end to the strike. Let us instil in our children hope for a better world. The physician could not hold out much hope to his patient. The hope of the coach for his team rode on their recent achievement. The Minister of Housing dangled the hope of interest-free loans before builders. The young man fixed his hope on finding steady employment. The newly elected Prime Minister was a source of hope to many citizens. Medicare was their beacon of hope. Do not hang your hopes on impossible schemes if you wish to avoid disappointment. Despite the dense fog, the explorers never gave up hope of finding their way back to their camp. The young bride clung to the hope that her spouse would return from the war alive. Unconquerable hope guided the romantic poet. In composing a great symphony, the musician realized a boyhood hope. The farmer's hope came true after he developed a species of wheat that was resistant to rust. Development of the electrical automobile advanced the car manufacturers' hope of success. Adverse economic conditions frustrated hopes of achieving a low rate of unemployment. She was radiant with hope after being nominated a candidate for office. An optimist will display hope even in adversity. The fisherman expressed hope for a good catch. The villain concealed a hope that the plane would crash with his mother on board. The silent hope of the innocent victim was an ultimate vindication. When the evangelist touched the sick woman, she trembled with hope. The children were glowing with hope on Christmas eve. No adversity will corrupt our hope.

NOTES

1. (Page 41.) Using the subscripts $_1$ and $_2$, we distinguish *linguistic*$_1$ 'pertaining or related to language' (= Germ. *sprachlich*) and *linguistic*$_2$ 'pertaining or related to linguistics' (= Germ. *sprachwissenschaftlich*).

2. (Page 48.) The primacy of the speaker's viewpoint for linguistics is so fundamental an issue that it seems recommendable to analyze here an interesting argument against it, advanced by Thomas R. Hofmann. The argument runs approximately as follows:

> Within the framework of "good" communication, the speaker has to make sure that he is properly understood; and to achieve this, he must put himself in the addressee's shoes, that is, try to decode all his own utterances and see whether they can be interpreted the way he intends them to be. Therefore, the speaker must use listener's device as well, with the result

that the task of speaking is harder than that of understanding.

The reasoning is quite sound - but it misses the point. Certainly, the speaker has to use a listening (= understanding) device, but it by no means follows from this fact that the speaking device is more complex than the listening one. The task of a speaker in a communication act may be harder than that of his listener; we do not, however, compare communication tasks, but rather mechanisms correlating meanings and texts (leaving aside mechanisms for constructing meanings, for backtracking what has been said, etc. - mechanisms that are extremely important in linguistic communication[1] but do not pertain to language and are, consequently, of no interest for linguistics).

3. (Page 49.) The logico-semantic predicate, place (of a predicate) and argument are central to the present discussion, but we are in no position to introduce them here. We assume our readers' familiarity with them and limit ourselves to a warning against confusing **predicate** in logico-semantic sense (= 'a meaning having obligatory slots for other meanings') with the grammatical term predicate (= 'main verb'). Likewise, place (= 'a slot of a predicate') and argument (= 'meaning filling the slot of a predicate') should not be taken in their every-day sense.

4. (Page 50.) For lack of space, we cannot even touch here upon the fundamental problem of semantic primitives.

5. (Page 51.) Once again, we are not in a position to substantiate here the use of purely distinctive (= meaningless) symbols instead of meaningful labels on the arcs.

6. (Page 64.) Interesting examples of values of the LF **Mult** in English can be found, most unexpectedly, in *The Book of Lists*, by D. Wallechinsky, I. Wallace and A. Wallace, New York: W. Morrow, 1977, page 135:

A murder	of crows	A rag	of colts
clowder	cats	drift	hogs
leap	leopards	charm	finches
sloth	bears	trip	goats
raffer	turkey	knot	toads
smack	jellyfish	parliament	owls
skulk	foxes	troop	kangaroos
labor	moles	gaggle	geese
crash	rhinoceros	pride	lions
siege	herons	muster	peacocks

"Although not frequently heard in conversation, these terms are fully correct and appropriate ways of describing the animal listed" (*ibidem*).

7. (Page 68.) A very good illustration of values of the LF **Real** (and **AntiReal**) in English is offered in Montreal's *The Gazette*, Sept. 28, 1985, in a letter to Ann Landers, which we reproduce here:

Dear Ann: *I discovered this item stuck in an old book. It was written in longhand and there is no sign of an author. I hope you will print it.*

I found it highly inspirational.

- T.D.

Dear T.D.: So did I. Here it is: What is Life?
Life is a challenge ... meet it.
Life is a gift ... accept it.
Life is an adventure ... dare it.
Life is a sorrow ... overcome it.
Life is a tragedy ... face it.
Life is a duty ... perform it.
Life is a game ... play it.
Life is a mystery ... unfold it.
Life is a song ... sing it.
Life is an opportunity ... take it.
Life is a journey ... complete it.
Life is a promise ... fulfil it.
Life is a beauty ... praise it.
Life is a struggle ... fight it.
Life is a goal ... achieve it.
Life is a puzzle ... solve it.

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II

GENERAL LINGUISTICS

A NEW TECHNIQUE FOR DIALECTOMETRY

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Given a set of dialects, one can construct a quantitative measure of *linguistic distance* (D) between each pair of dialects in the set. As in lexicostatistical applications in historical linguistics, D is typically based on lexical distance, but there are occasional examples of phonological and morphosyntactic measures in the literature. The quantitative measure of distance between dialects is a field of fairly recent interest, for which the designation *dialectometry* has been used by various dialectologists (e.g. Séguy 1971, Guiter 1973, Fossat 1977, Chambers and Trudgill 1980, Goebl 1982, Francis 1983, Schneider 1984). The advantages of dialectometry are the usual benefits associated with the use of quantitative techniques: the method is objective and explicit, with the consequence that the results are repeatable (by other investigators) and not just impressionistic; and the method is faster for a given amount of data (or, equivalently, can handle more data in a given amount of time). Thomas (1980:4) goes even further than this: "the data of dialectology--at the point when it is regarded as being extensive enough to allow of analysis into such concepts as 'area' and 'boundary'--invariably forms too large a corpus for the analyst to comprehend in its entirety', thus *requiring* the use of computers and quantitative methods. In my own view and that of most researchers in the field (e.g. Schneider 1984:330), dialectometrical techniques are designed to supplement traditional dialectology, not replace it.

Any dialectometrical technique must deal with three issues: how to construct the distance measure; what to do with the numbers; and how to interpret the results. I will treat the first of these separately as it is relatively independent of the technique used, and then treat the latter two together as both are intimately bound to the particular technique used.

Measures of distance between languages exist in historical linguistics. These are usually lexical, based on cognate counts. Thus one commonly encounters statements such as "Language A and Language B score 68% cognate on the Swadesh 100-word-list." These languages would then be regarded as having a similarity (S) of .68 or (equivalently) a distance (D) of .32. An "all or nothing" approach is used--either a given meaning has cognate words in the two languages or it does not. This may be appropriate for measuring the distance between languages, but, since the differences between dialects would normally be expected to be considerably less (as well as more subtle) than the differences between languages, such a method is not refined enough to be used for

dialectometry. We need to allow for several possible realizations (each with a certain frequency of occurrence) of each item in each dialect, rather than just one possible realization; thus a lexical item could be represented in a dialect by a set of synonyms, each of which has a certain frequency, rather than by just one word. Sankoff (1972; here corrected) provides a suitable measure for distance involving sets of synonyms:

$$D_{V_iV_j} = \frac{1}{2k} \sum_{I} \left| F_i(I) - F_j(I) \right|$$

where k is the number of items involved for the pair of dialects (or varieties) V_i and V_j,

F_i and F_j are the two frequency distributions being compared, and

I refers to each cognate root in turn.

An artificial example involving 3 dialects and 7 items follows.

	V_1	V_2	V_3
item 1	A(1)	A(1)	A(1)
item 2	A(1)	B(1)	C(1)
item 3	A(1)	A(1)	B(1)
item 4	A(.8),B(.2)	B(1)	B(.5),C(.5)
item 5	A(.6),B(.2),C(.2)	A(.7),B(.3)	A(.6),C(.4)
item 6	A(1)	A(.7),B(.3)	A(.7),B(.3)
item 7	A(1)	A(.5),B(.5)	B(1)

Figures in parentheses indicate frequency of usage of that particular synonym expressed as a fraction of total usage; thus dialect 2 uses word A 100% of the time for item 1, and dialect 3 uses word B 50% of the time for item 4 and word C the other 50% of the time. The distance measure proposed above allows us, for example for item 5, to note the similarities *and* the dissimilarities in the frequency distribution of the synonyms in the three dialects, whereas a conventional cognate measure would simply note that word A (as the most frequent synonym) is "the" word for item 5 in all dialects and miss the dissimilarities.

The computation of the distances follows.

$$D_{V_1V_2} = \frac{1}{14}\left[0+(1+1)+0+(.8+.8)+(.1+.1+.2)+(.3+.3)+(.5+.5)\right] = \frac{5.6}{14} = .4$$

$$D_{V_1V_3} = \frac{1}{14}\left[0+(1+1)+(1+1)+(.8+.3+.5)+(0+.2+.2)+(.3+.3)+1\right] = \frac{7.6}{14} = .543$$

$$D_{V_2V_3} = \frac{1}{14}\left[0+(1+1)+(1+1)+(.5+.5)+(.1+.3+.4)+0+(.5+.5)\right] = \frac{6.8}{14} = .486$$

For any set of dialects, applying D pairwise to all pairs of dialects leads to a (symmetric) matrix of distances, which can then be used as input to any dialectometrical method.

There are at least seven dialectometrical methods involving visual representation of D, but only three will be considered here; all seven are discussed in Embleton 1985. The first (and least sophisticated) of these is used by Jean Séguy and his pupils.

The method consists of simply writing the value of D at an appropriate point on the map (usually on a line joining the two locales in question), as in Figure 1:

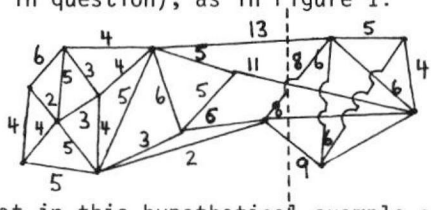


Figure 1:
Séguy's method

----- = isogloss bundle

Note that in this hypothetical example all the lines joining two locales which *cross* the "isogloss bundle" have larger D's (13,11, 9,8) than those which do *not* cross the "isogloss bundle" (all ≤6). Thus we would want to say that this "isogloss bundle" represents a *dialect boundary*. Remember that in actual practice the map comes with just the locales (named or numbered), lines, and D's, and not with the convenient dotted line. It is of course the investigator's task to establish the position of that dotted line, by examining the map for clusters of large values of D. This is not an easy task, because the map (and the method) does not integrate all the information in an immediate and obvious way.

A more appealing method is one proposed by Hans Goebl, borrowed from geography where it is known as *choroplethic maps*, and based on the fact that the human eye can distinguish 6 to 8 color depths (Goebl uses 6). For each language variety, look at its D's with all other varieties and determine the maximum, minimum, and average D. Then, divide the interval between the average D and the maximum D into 3 equal intervals, and the interval between the average D and the minimum D into 3 equal intervals. This results in a division of the D's for the given variety into 6 classes, each of which is then assigned to one of the 6 depths of color (with the darkest corresponding to the smallest D's, in other words indicating varieties which share the most with the given variety). A hypothetical example is shown in Figure 2:

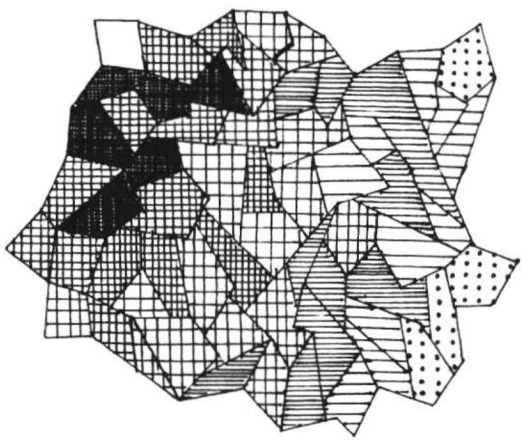


Figure 2:
Goebl's method

- locale in question
- largest D
- second-largest D
- third-largest D
- third-smallest D
- second-smallest D
- smallest D

A sudden change in color depth between adjacent varieties on the same map would be suggestive of the traversing of an isogloss bundle. In addition, maps corresponding to adjacent locales would be expected to show only a slight shift in the overall coloring relative to one another; a radical shift in the overall pattern of coloring would indicate a dialect boundary between the adjacent varieties. One could perhaps demonstrate this using slides of the choroplethic maps corresponding to successive locales, shown at equally-spaced time intervals. Changes in the coloring of the map would normally be gradual, but more sudden if successive locales were separated by an isogloss bundle.

One obvious disadvantage of Goebl's method is that it requires one map per locale, and even by computer these take a certain amount of time to construct. Examining the maps is still too much like leafing through a dialect atlas, map after map after map. As with Séguy's method, this method does not integrate all the information in an immediate and obvious way.

Multidimensional scaling is a statistical technique which reduces data originally in *k* dimensions successively to *k-1* dimensions, *k-2* dimensions, and so on, down to 2 dimensions or even just one dimension. Thus we can start with our D-matrix, which will be in as many dimensions as we have varieties, and reduce it to a 2-dimensional representation, which will in essence be a "linguistic map" of the dialect space. This can then be compared to a traditional geographical map (which is simply a two-dimensional representation of geographical distance) for discrepancies. It is in the interpretation of these discrepancies (i.e. between the linguistic map and the geographical map) that our interest lies. Multidimensional scaling has been applied in the case of different languages (as an alternative to trees) by Black 1976 (to 3 language families) and Dobson and Black (no date; to one language family), with reasonable success.

Compared to true geographical distance, linguistic distance is expected to be distorted in two ways: it can be *increased* by the existence of isogloss bundles between the two locales, or it can be *decreased* by intercommunication between the two locales. Thus a dialect boundary will have the effect of pushing two locales further apart, whereas intercommunication will have the effect of pulling two locales closer together, as illustrated in the following three hypothetical examples.

Suppose the true geographical map is Figure 3a, but the linguistic map is Figure 3b.

Figure 3a:	.1		Figure 3b:	.1	.3
Geographical map	.2	.3	Linguistic map	.2	

On the linguistic map, 3 is closer to 1 and 2 than expected from our knowledge of the geographical map, implying heightened intercommunication or a "rapprochement" between 3 and both 1 and 2. Suppose, however, the true geographical map is Figure 4a, but the linguistic map is Figure 4b.

Figure 4a: Geographical map

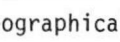
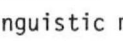


Figure 4b: Linguistic map



This time, 3 is further from 1 and 2 on the linguistic map than expected, and one would conclude that there is an isogloss bundle or dialect boundary separating 3 from 1 and 2. Finally, suppose that the true geographical map is Figure 5a, but the linguistic map is Figure 5b.

Figure 5a: Geographical map

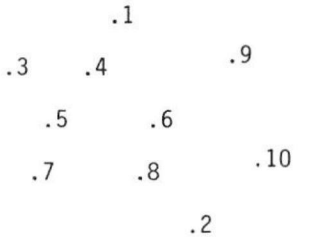
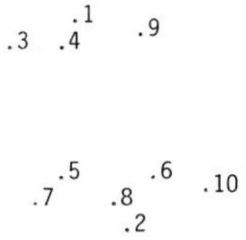


Figure 5b: Linguistic map



The discrepancies between the two maps would lead one to conclude that there is a dialect boundary between 1, 3, 4, 9 on the one hand and 5, 6, 7, 8, 10, 2 on the other, and probably also that 1 and 2 are important centers (for trade, culture, politics, etc.) because they seem to act like magnets in pulling other locales "closer" into their field.

The advantages of this multidimensional scaling method over the methods of Séguy and of Goebl (and indeed over other dialectometrical techniques not discussed above) are that the maps are easily constructed and that the information is all integrated onto one map in an immediate and obvious way, with the isogloss bundles and rapprochements shown clearly.

In order to test the new method on a large body of non-controversial dialect data, 18 representative localities with 128 lexical items each were chosen from the 313 localities in Orton and Wright's 1974 A Word Geography of England (WGE). Lexical distances were calculated, and a two-dimensional map of linguistic distance was produced using the multidimensional scaling technique. The geographical position of the 18 localities is shown in Figure 6a, and the linguistic map in Figure 6b.

Key to the Localities in Figures 6a and 6b:

1	Soulby (We-3)	10	South Clifton (Nt-3)
2	Eggleston (Du-6)	11	Turvey (Bd-1)
3	Coniston (La-1)	12	Ullesthorpe (Lei-10)
4	Stokesley (Y-2)	13	Hanbury (Wo-3)
5	York (Y-19)	14	Stogursey (So-6)
6	Dolphinholme (La-4)	15	Coldharbour (Sr-3)
7	Allendale (Nb-9)	16	Appledore (K-7)
8	Swettenham (Ch-8)	17	Little Bentley (Es-7)
9	Youlgreave (Db-4)	18	Egloshayle (Co-3)

L London

Figure 6a: Geographical map

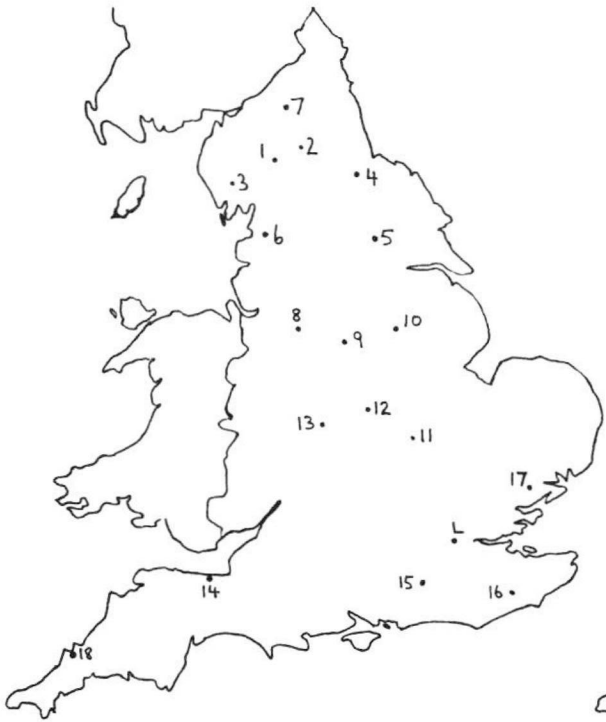


Figure 6b: Linguistic map

The results indicate a good match between linguistic and geographical positioning, but, as explained above, it is from the discrepancies between the two maps that our information about isogloss bundles and rapprochements comes. Compared to the geographical map, locales 1 to 7, locales 8 to 10, and locales 11 to 18 cluster more tightly; these three clusters represent northern, midland, and southern respectively. The resultant extra space between the clusters corresponds then to some traditionally established isogloss bundles. Note also that within the southern group 14 and 18 cluster together, as do 15, 16, and 17, and to a lesser extent 11, 12, and 13. Locale 18 has been pulled a considerable distance from its geographical position. This seems to be related to the death of Cornish, and the fact that dialects from further east (even as far east as the London area) were "imported" to replace Cornish within the last several hundred years (i.e. comparatively recently, considering the time-span of the development of English dialects; cfd. Wakelin 1977:91). Locales 15, 16, and 17, all dialects of the south-east, have been pulled into a very tight cluster near London, evidently through the extreme influence of London itself. Locales 11, 12, and 13 have been pulled slightly together and somewhat nearer London, indicating again the influence of London, although to a lesser extent than with 15, 16, and 17 (which were after all much nearer to London to start with). The discrepancies between the two maps, then, present strong evidence of agreement with the conclusions reached by traditional dialectological methods.

In addition to lexical distance, phonological, morphological, and syntactic distances for the same 18 localities have been computed from Orton et al's 1978 The Linguistic Atlas of England (LAE) and mapped using the multidimensional scaling technique. An "overall" linguistic distance composed of all four of these distance measures combined was also calculated and used in the same manner to produce maps for comparison and analysis. Again the results so far show agreement with conclusions reached by more traditional methods, indicating that further testing of this new dialectometrical method (perhaps on a larger set of localities from WGE and LAE) would be appropriate, with a view to eventual application to less well-studied dialect data.

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LANGUAGE ORIGIN: A JUST-SO STORY

Joan Gleason Fickett

The origin and development of language remains shrouded in myth and mystery. We can expect that stories will continue to differ according to the imagination of various storytellers and the facts they choose to emphasize.

In the early sixties Charles Hockett presented his story of how language developed, drawing his knowledge of language structure together with new information from paleontology, archeology, primate studies, the study of the brain and the development of language in children. Prior to the sixties, speculation by linguists was theoretically outlawed. Common folk accepted bow-wow and ding-dong and the many educated folk were content with the definition of language as the expression of thought.

Hockett's use of the term development was in itself revolutionary. Although the scientific community then accepted the evolution of hominids in general (if not in detail), many linguists, including my mentors, clung to the single creation of full-blown language, created if not by God, at least by some very inventive hominid.

Because I believe that no story of language development, either fanciful or serious, should ignore the facts of language structure, Hockett's story continues to be my favorite. By language structure I mean such crudities of surface structure as phonemes, morphemes, and patterned clusters or sequences of morphemes marked by recurring intonation patterns.

Considerable questioning and research has gone on since 1960, particularly in animal communication. We have learned much about apes, but little of the origin of human speech. The apes seemed to have triumphed, as in The Planet of the Apes. We should not put down the apes. We have learned that they can use symbols and coin neologisms like waterbird for 'duck'. Lana can use orderings as significant, ask questions, and give orders. Her unfortunate prototype, Sarah, was educated only in the imperative mode, for it was the stated aim of her mentors to develop a method for teaching language to retarded kids. The case of Lana and her ilk is important because it establishes that cognition and cerebration are not the only factor in the development of language, else the pongidae, had they the other necessary equipment, would have language. Which they don't! I would like to point out that in all instances of pongid "language skills" it is human beings who have devised the symbols. Lana did not invent Yerkish.

Investigation of the morphology and physiology of the brain has brought progress. Moving beyond phrenology, it now appears that aside from Broca's area, language is not "localized". There is no memory bank at the intersection of Main and First. I do have a question concerning the brain that begs for an answer: what is the cerebral process by which hearing and vocalizing are linked so that without reference to meaning, in fact better without it, human beings can produce fine-tuned imitations of all kinds of noises - sirens, trains, cows, dogs, owls, popping corks - and most of all, the sounds that other people make?

We should not downplay our skill as imitators because conventionalized imitations are unlike unconventionalized imitations. Nor should we rule out this skill as having something to do with the development of language. Parotting, much maligned as mindless should not be scoffed at. We are all virtuosos until we learn that it's not nice to be copycats. Strangely enough, one of the tasks of the Stanford-Binet test given me in 1931 was to repeat back meaningless strings of numbers.

Sometimes the low energy level of ordinary talking is cited as reason for ruling out mimicry as significant in the origin of speech. My explanation for the low level is very simple; I expect it will shortly be dubbed simple-minded. Nevertheless, I note that my dogs cannot, or do not bark while dining. They will not forego eating to announce intruders, but one will growl low key if the other tries to move in on her dinner. I cannot imitate my dogs while I am eating, but I can say bow-wow or arf-arf and never miss a bite, as long as my mouth is not too full. For humans, conversation occurs without dining, but dining seldom occurs without conversation. It seems reasonable to suggest that combined eating and noisemaking could have led to the restriction of the energy level of language, particularly if our ancestors were snackers like the pongidae.

Besides restoring skill in mimicry to reasonable significance in history, I must also assume that early hominids had a rudimentary set of vocalizations. I hesitate to dub this a call system because I would like to think it included, besides warning and calling calls, vocalizing that accompanied begging or the sensations of pleasure or disgust. If this smacks of the pooh-pooh theory, so be it. I will subscribe to the notion that the set of vocalizations was limited, or if you will, closed. At minimum it would include a warning unit, a calling unit, a begging unit and two judgmental units: Look out!, Yoo-hoo!, Heh?, Mmm!, and Yeuch!, for example. I emphasize these fragments because I hypothesize that utterance types derive from very primitive intonation patterns. None of my examples would qualify as "grammatical sentences" and are allowable in a written composition only if followed by an exclamation point or enclosed in quotation marks. Produced in isolation, that is, outside of a flow of speech, they exhibit contrastive intonation patterns. Interrogatives, vocatives, expletives and imperatives are the orphans of grammar, but may have been more important in history

than the logical proposition. Saul Levine pointed out many years ago that such utterance types were worthy of investigation. Look out, Chi Chi, a snake! may have saved more lives than Flying snakes can be dangerous. I realize it may seem ridiculous to propose that sentences came before words, but all languages do have intonation patterns and units which, regardless of the segmental sounds, are in contrast by reason of contrastive intonation patterns. If I seem to be putting the cart before the horse, I would remind you that such is the case of frequent occurence on modern highways.

Now, granted a limited or closed system of vocalizations, how did it become open? Hockett proposed accidental blending, but I have always had trouble with that idea. True, blending occurs, but I have never seen a case where the phonetic or semantic leftovers were put to use. On the other hand, compounding and reduplication are such common practices in inventory expansion I see no reason why they should not be seen as having great antiquity.

Compounding does not explain the origin of what is compounded. My primitive complex utterance Look out, Chi Chi, a snake! hints at my reconstruction of what may have been the most crucial event in the birth of language. Chi Chi is a NAME for a person. All human beings have names. The name is specific to a single given human. The NAME stands for a class of one member. It is not customary to include personal names when compiling a dictionary for a language, yet in human interaction they are ubiquitous. Some people have libraries of telephone directories, and the newest item on the national information market offers the names of people who have written bad checks.

Seeing the bestowing of names as crucial in history pays little homage to the much touted generalizing, abstracting function of language whereby a term refers to a class of events which has many members. Nevertheless, I think personal names were the first giant step. Although chimpanzees recognize each other as individuals, they do not greet or call each other by name. A limited call system could be opened up to the extent of the number of individually named group members. Besides "opening up" the system, individual naming could enhance the survival of specific individuals. When mom called Yoo hoo, Ang Yang, yum yum!, Ang Yang was well advised to run to her.

The stage is now set for my account of the primal instance. A handful of hominids was lounging around consuming handfuls of mongongo nuts as they rested in the shade. Suddenly they heard a youngster crying, or at least his mother heard him. Like a good mother, she hurried to the rescue, imitating the toddler's cries as she moved in his direction. Chimpanzee mothers go to the rescue, but remain silent. When humans search for a lost child they go through the neighborhood calling out the child's name Ang Yang! Ang Yang! In English the pitch pattern is the same as for Yoo hoo.

At any rate, after the rescue, Ang Yang had a label, and when the outfit talked about Ang Yang as they munched yum yums

while lounging in the shade, they streamlined the initial imitation of the youngster's cry, to accomodate their eating.

I suggest the mother-child relationship as the locus of innovation for obvious reasons, but it could have been siblings who were looking out for each other, as in sibling conspiracy. My brothers and I greeted each other for years with a glottalized post-velar click followed by a low front vowel. If language stems from mimicry, what humans undoubtedly imitated first was each other.

What next, then? Perhaps the conventionalizing of animal imitations, which would yield morphemes representing classes of experience. With this, a pretty good topic-comment language is in the works. Kinesics could very well have symbolized remembered or projected activities.

What might have been the genesis of so called "action" words? Once body parts had names, we were on our way. We thumb pages, hand over taxes, and bad-mouth the government. If you can agree that tools are in essence extensions of the body parts, it is easy to draw a connection between a growing inventory of tools and an extended representational system. I like to think that modern verb systems exhibiting aspect and tense had their beginning in the manufacture of tools involving sequence and irreversibility as against cyclicity.

My time table for the development of language is very sketchy. First, I consider phonemic systems, for I vacillate between putting them very early or very late. Phonemes were discovered late, as marked by the holocene invention of the alphabet, but like many patterns in nature, they may have existed long before their discovery. Probably our initial yakkers used only part of the sounds they could make in their start-up inventories. I suggest that articulatory habits were kept in check by listening habits and stylistics acceptable in a neighborhood. I am reminded, too, of Austin's law which states that the allophones of a phoneme can vary in point of articulation or manner of articulation but not both. This suggests that limits to variation are set by the design of the speech-hearing apparatus. My present guess is that rudimentary patterned variation came in with names or shortly thereafter. We can be sure though that language did not begin with disembodied sound classes. Aside from the problem with phonemic systems, the rest of the timetable can be seen to correlate with the development of culture.

A primitive set of vocalizations without personal names might be reasonable for a dryopithecine ape such as Ramapithecus. I wish I knew what Ramapithecus ate and what his hind legs looked like. Point zero is in the Miocene, with the appearance of a hominoid pre-adapting for speech.

The earliest and critical stage was characterized by personal names and a set of ulterance types. I am guessing that the Australopithecines, or their cousins, were the stars of Act I. The time of simplest language, the crudest hand axe and a digging stick was the early pleistocene continuing into the

mid-pleistocene.

The inventory of morphemes expanded as animals, body parts, tools and places acquired names. The sequencing of actions became important as the variety of tools manufactured increased. Later Homo erectus and certainly Neanderthal are to be included in Act II, and I would put the period from 300,000 years ago to approximately 50,000 years ago. By this time, all of the essentials of language were in place. I do not see how Neanderthal can be excluded from full language. If he had a short larynx, he may have sounded funny, but so do people who are tongue tied, or have short palates, or lost their teeth.

Thus my just-so story ends. Perhaps to set it apart from bow-wow and other ding-a-ling stories it should be dubbed "The Yoo Hoo Theory".

The story is subject to revision immediately. You might want to check out at dinner time what I have said about eating and talking at the same time. Remember not to take big bites and do not, do not talk with your mouth full.

Notes

1. The phrase, just-so story is taken from Rudyard Kipling's title for a group of tales explaining how the elephant got his tale, etc. I use the phrase to emphasize the largely conjectural nature of my reconstruction.

2. Anecdotal material illustrating common human behaviors is omitted for reasons of brevity.

3. Lenneberg claims "sound analogy or sound imitation is never encountered un-phonemicized". Extensive personal experience and observation lead me to question his claim.

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SAUSSURE AND THE VARIATIONISTS

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What is a language? I have argued elsewhere (1984) that it is not a set of sentences. We still see this untenable definition in the elementary manuals for teaching linguisitcs, however. It is a definition that needs to be replaced so that another generation of linguists will not be taught fundamental definitions that are demonstrably erroneous.

I would prefer to see a language defined as a system of systems. A language such as English, for example, has a phonological system, with a subsystem of vowels, and a subsystem of consonants. It also has a system of parts of speech, which is the basis of the dependencies of syntax, and each part of speech englobes subsystems: the verb, for example, has subsystems of tense, mood, person, and so forth.

This point of view is, of course, essentially Saussurean, although from a true twentieth century perspective we should think of the systems as functional and dynamic rather than static. Certainly, in this postEinsteinian era we should be able to conceive of _langue_ and _parole_ as the beginning and the end of the act of language, indivisible, inseparable aspects of a single dynamic unity: language, Saussure's _langage_. This is a necessary modification and adaptation, stemming from Gustave Guillaume (1973:143-146), of Saussure's pre-Einsteinian view of _langue_ and _parole_ as "deux choses absolument distinctes" (1916:38), a view that has overtones of dualism. To conceive of them as the beginning and the end of the act of language has therefore two advantages: (1) we thereby properly represent language as a dynamism, an activity, and (2) we create a holistic, monistic rather than dualistic, point of view.

Let us illustrate this abstract discussion with a concrete analogy: the child's construction set, a Meccano or Erector kit, or even a set of Lego blocks. The set is an analogy for Saussure's _langue_, a tongue, a community language, and the models made from this set represent _parole_, which Guillaume renames as _discours_, discourse. The models therefore represent sentences, the product that you create when using your language. Construction of a model starts with picking pieces from the set (we talk of "finding the right words") and ends with their incorporation into the model. From the analogy it can be seen that the set and the model, rather than "two completely distinct things" are in fact

two different moments in a single holistic process, and that the phenomenon of language is not a Ding-an-sich, but an activity: the creation of meaningful discourse.

From a purely static point of view, however, the set and the model are quite different. If in fact we conceive of the set as being fundamentally the same for everyone, we thereby represent the community language as being a monolithic invariant, like the child's mass-produced construction kit. This fails to respond to the criticisms of the variationists, that such a view takes no account of the amount of variation that is an observable phenomenon in any linguistic community. Are we thus perpetuating what has been called the "Saussurian paradox", as expressed, for example, by Labov (1972:105) and quoted by Bailey as a criticism of Saussure (1973:12):

> The social aspect [langue] of language can be studied through the intuitions of any one individual, while the individual aspect [parole] can be studied only by sampling the behavior of an entire population."

One concludes from this comment that what can be studied from a single person can hardly be called social, and that what requires population sampling can hardly be called personal.

It is true that Saussure speaks of langue as belonging to the collectivity, and of parole as being personal, but it should be noted that the paradox reinforces this view, and in no way weakens it. If langue is essentially the same for all members of a given community, then to obtain information on this community language, all one needs is a single speaker, because the same answers would be given by all if the phenomenon is community wide. And if parole is personal, one needs to consult all the different persons in the community to gain an overview of personal usage. It is quite mistaken, therefore, to conclude that the paradox in any way weakens the Saussurian view. The paradox, in effect, arises from the fact that there is frequently in science a radical difference between what is analysed or observed and one's means of observation: to analyse gravity one observes falling bodies, but a falling body and the force of gravity are scientifically quite different, just as a single speaker and a community language are quite different.

The real challenge of the variationists, however, still remains unanswered: how are we to account for the vast amount of variation that can be observed in any community if a community language is a single monolithic invariant. If the speech of a Londoner is observably different from that of a New Yorker, and that of a New Yorker quite different from that of an Australian, how can they be said to speak the same language?

The answer to this challenge comes from another analogy, one that was used by Saussure himself: the game of chess. Saussure used this analogy to distinguish form (the rules of the game) from substance (the chess pieces) and to assert that one can change the chess pieces without changing the game. Changing the rules, however, changes the game. In fact if a piece is lost it may be replaced by "any conceivable object of a convenient size" as Hjelmslev pointed out (1959:28). If we replace a lost rook with a small spice bottle we have in fact an analogy for a suppletive morph.

More importantly, however, it is largely irrelevant whether one says dived as the British do, or dove as many Americans do, provided that in both cases the different forms both represent the past tense of the verb to dive. The system, in Saussurian terms, does not lie in the directly observable morphology; it lies in what the morphology represents, and this is exactly what Saussure meant when he said "... la langue est une forme, non une substance" (1916:169). The substance, in this case the morphology, leads to the system, represents the system, but is not itself the system. The morphology, as we know, may indeed be irregular, but the system it represents has a strikingly coherent regularity: no English dialect has more than two tenses, the past and the non-past. The irregular verbs have the same two tenses as the regular verbs do.

The example that Saussure uses shows historical variation of plural morphology (1916:120) from Proto Germanic */fo:ti/ which becomes */fö:ti/ by umlaut, then by loss of rounding and apocope becomes /fe:t/ to give Modern English /fiyt/ but the regular systemic plural that these forms represent has remained unchanged, unaffected by the variations in the morphology.

One would be remiss, however, to leave the impression that a language such as English, wherever it is found, is invariant in its systems, in its form, and varies only in its phonological or morphological substance. Most variation is a matter of substance, but there are instances where ultimately a variation of substance becomes a matter of form as well. If, as Saussure pointed out (1916:43) we decrease or increase the number of pieces, "ce changement-là atteint profondément la grammaire du jeu." When American English develops a meaningful contrast between got and gotten as two different participles of the verb get, it has increased the "number of pieces" and has formalized a distinction not found in British English:

(1) He's just got a bicycle
(2) He's just gotten a bicycle

The word just in (1), because of the static sense of got, means only; in (2) it means recently because of the dynamic sense of

gotten. If this change were to spread to other verbs, it could trigger a significant shift of system.

The difference between substance and system is seen perhaps even more clearly in phonology, however. Most British dialects, for example, share with most Canadian and American dialects, as a subsystem of the vowel system, a set of diphthongs with semi-vocalic offglide, that developed historically out of the Old English long vowels. The reflexes of Old English /i:/ and /u:/, which became /ay/ and /aw/ in Standard English may also be heard regionally as /ɑy/ and /ɑw/ or as /ə y/ and /ə w/, and Canadian pronunciations of bite and bout as /bəyt/ and /bəwt/ have caused much discussion and spilling of ink under the rubric of "Canadian raising". Yet this is the kind of difference that while it may initially inhibit comprehension, is a difficulty that is soon overcome, once speakers of different dialects recognize that the different sounds, the different substance, cover the same set of contrasts.

During the Second World War, for example, it was not unusual for a company of soldiers, recruited in one dialect area, to be billeted in an area remote from their own. At first there would often be almost total confusion, even in simple things like ordering a glass of beer or a packet of cigarettes. But after two to three weeks of habituation, communication would no longer be a problem. This instant comprehension of an otherwise incomprehensible dialect requires the recognition of a common phonological system shared by the two dialects, in spite of the differences of substance. This also means that to think of a vowel system in the terms of Trager and Smith (1957) is misleading: they are trying to find phonological system in substance, whereas it lies, as experience shows us, not in the sounds themselves, but in formal contrasts that may be represented, in different dialects, by different substance. A similar problem exists with Chomsky-Halle's representations in Sound Patterns when they say that "... very different dialects may have the same or a very similar system of underlying representations" (1968:49). These "underlying representations" are clearly phonological substance, from which the surface substance is derived by a series of phonological rules. There is no sense of a phonological system as a set of contrastive positions, a genuine closed system, as conceived by Saussure as early as the Mémoire sur les voyelles (1879). Instead we have simple sounds, and the system becomes a set of rules, which fail to be systematic because of exceptions and irregularities.

Such rules, because one can invent them to produce results at will, also gloss over situations where there is a genuine difference of system. Those English dialects, for example, that have lost syllable final /r/ have developed a new subsystem of long vowels that does not correspond, systemically, to any subsystem in those dialects that have preserved syllable final /r/. In

fact, where there is phonetic lengthening in American dialects before voiced obstruents there can be confusion between British bird and American bud, between blurred and blood, between fared and fed, between blared and bled:

(3) There were birds/buds on the trees
(4) The windshield was all blurred/blood
(5) ...never fared/fed better
(6) It blared/bled all over the place

Similar confusions cover such pairs as guard and god, pores and paws, and even barns and bonds. Confusions over syllable final /r/, furthermore, are not limited to stressed syllables. American or Canadian born children of British parents may well grow up in the steadfast belief that there was an ancient Aztec emperor by the name of Monty Zoomer. We may conclude, therefore, that loss of syllable final /r/ is a systemic change and not just a variation of phonetic substance.

Conclusion

In conclusion, therefore, we may identify two different kinds of variation that may be distinguished from a Saussurian point of view.

First there is variation of substance, that allows every speaker all kinds of ideosyncratic variation, both phonological and morphological. This variation of substance does not affect what Saussure rather confusingly called "forme", that is the fundamental contrastive systems of the language, along with their inter-related subsystems.

The second kind of variation does affect the systemic level, since it is the product of systemic change. While this kind of variation affects only the subsystems, the forms of speech so affected may still be considered related dialects of the same language, mutually comprehensible with some adjustments. But if systemic change becomes major, affecting the systems as a whole instead of merely the subsystems, then we are dealing with related languages, such as French and Spanish, mutually incomprehensible.

The Saussurian view of language, therefore, is not only capable of accommodating variation, but may in fact, when properly understood and exploited, promote insight into the nature of variation.

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THE PRAGMATIC ASPECTS OF HUMAN LINGUISTICS

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After over a century and a half the possibility of a scientific linguistics still excites the imagination. If linguistics were finally to become a true science, we could test competing theories against objective evidence from the real world, and free the discipline from the arbitrary dicta of fads, fantasies, and fanatics.

The key to developing a truly scientific linguistics is to study people from the point of view of how they communicate rather than trying to study some abstraction called language (Yngve 1975, 1983, 1984, 1985). The problem with studying language is that it is not a real object; it is simply introduced by assumption. Theories of language can not be tested scientifically, as there is no real object to test them against. But if we study people, we actually can test our theories against reality, for people are real objects that can be observed. This program, the scientific study of how people communicate, is called human linguistics. It contrasts with the more traditional linguistics of language.

It might be thought that pragmatics would qualify as studying people, but this is not exactly correct. According to the well-known scheme of Morris (1938) and Carnap (1942), a discipline that makes explicit reference to the users of a language is in pragmatics. If it abstracts from the users and treats only forms and meanings, it is in semantics. If it also abstracts from the meanings and analyzes only the expressions, it is in syntax. This view has several problems. First, in making the syntax-semantics-pragmatics distinction it assumes a concept of language, but language can not be studied scientifically because it is not a real object. Second, it then views people as language users, but defining people in terms of language seems perverse, for people exist in the real world while language does not. Third, since pragmatics includes both syntax and semantics, the a priori partitioning into syntax, semantics, and pragmatics is called into question. Human linguistics does not assume language and thus does not see people as language users, and it does not arbitrarily abstract out semantics and syntax, and then try to build on them.

1. Choosing a paradigm example

Recall that the linguistics of language is normally introduced at the level of phonology. The fundamental concepts of

contrast and distribution are established using such examples as pin pen pill and so on. Then the higher levels of morphology, syntax, semantics, and pragmatics are built on this foundation. But human linguistics can not be introduced from the bottom up in this fashion for it does not assume language or abstract out syntax and semantics; it is pragmatic from top to bottom. If we wish to start with simple examples, they must be pragmatic examples.

The usual sorts of examples in pragmatics such as I dub thee knight and I bet you sixpence (Austin 1962) are taken to illustrate how people do things with words, like knighting someone or making a bet. But we cannot use such examples if we are to start with pragmatics because they are verbal expressions requiring a prior analysis in terms of words, syntax and semantics, which are not yet available. Saussure took the rules of the moves in chess to be analogous to the rules of language, but the pragmatic effects of the moves would be more appropriate for our purposes, such as protecting a pawn or threatening a queen. One might also consider pragmatic examples from bridge or baseball such as leading from strength or stealing second on a pitch. But these examples are too complex for introducing linguistic concepts, and not everybody knows these games.

Retaining the game metaphor, we will take the children's game of tag, which is one of the simplest games known, and is widely played around the world in a number of cultures. In this game, one of several children is "it". His object is to "tag" some other child by touching him with his hand, thus becoming "not it", and the other child becomes "it". The other children try not to be tagged.

For a paradigm example the game of tag has the advantages of simplicity and transparency.[1] The tagging has a pragmatic effect on the child who is tagged which is similar to that of I dub thee knight (I dub thee "it"), but it is completely nonverbal, thus its analysis does not require a prior analysis of speech. The tagging also has a pragmatic effect on the child who tags which is similar to that of I bet you sixpence, where the person who offers the bet is also committed to accepting the bet (the child who tags becomes "not it").

2. Properties of people

In the human linguistics analysis of tag, we study how the children communicate as part of the game. For each child we set up an abstraction called a communicating individual, which covers only the linguistically relevant aspects of the child.

Communicating individuals are defined in terms of properties, which are established on the basis of observable sames and differences between different people and between the same person at different times. Each communicating individual has different

properties from every other communicating individual because no two people are ever the same.

A child playing tag has either the property of being "it" or of being "not it" at any given moment. These properties are called conditional properties or conditions. They are postulated on the basis of observing the child's behavior of either chasing other children or being chased.

The conditional properties of being "it" or "not it" at any given moment are the values of a dimension called a categorial property or category, which the child acquires when he learns to play tag. This property of being able to be "it" or "not it" while playing tag is postulated on the basis of observed sames and differences between children who can play tag and those who can't.

There is a hierarchy of categorial and conditional properties. At one level the property of playing tag is categorial, in that it involves the category of being "it" or "not it". In relation to a higher level, playing tag is also conditional in that it represents the current value of the "playing tag or not" category.

How does tagging and being tagged work? The child has properties of tagging and of being successfully tagged that change the conditional property of being "it" or of being "not it". These properties of tagging and being tagged, also learned when the child learns to play tag, are called procedures, or procedural properties. When a child tags or is tagged, procedures execute. These procedures are postulated on the basis of observed sames and differences in children playing tag.

When procedures execute, they change conditional properties. When a child who is "it" tags someone, a procedure executes in the child, changing his conditional property of being "it" to that of being "not it". And a procedure in the child who is tagged also executes, changing that child's conditional property of being "not it" to "it". These are pragmatic effects.

In a parallel example, the condition of a person asking a question changes to that of expecting an answer, and the condition of the person who is asked the question changes to being on the spot to provide an answer. Other examples include getting into a conversation, being introduced to someone, or making a promise. The pragmatic aspect of the executing of a procedure is evident: What's important is what it does, not what it transmits. What it does is change the appropriate conditional properties.

What is transmitted is merely physical energy: the energy of a touch on the shoulder, the energy of the sound waves of speech, the light energy reflected from a gesture or a smile. The transmitted energy results from the executing of appropriate procedures

in the person who tags, speaks, gestures, or smiles; and it serves to trigger the procedures of understanding in the other person. In this picture we can also analyze cases of misunderstanding or nonunderstanding, for the communicative changes are relative to the individuals involved.

3. Context

Human linguistics has a simple and central method of handling contextual factors, which gives it a considerable advantage.

A touch on the shoulder counts as tagging only under appropriate contextual conditions. The difference between simply touching a person on the shoulder and tagging him is in the procedures that execute, and this depends on the conditional properties at the time, which record the relevant context.

For a person to tag someone, he must be playing tag, he must be "it", he must recognize the other person as being in the same game, and he must touch the other with his hand. Under these conditions, a tagging procedure will execute, changing his conditional property of being "it" to being "not it", and he will have tagged the other.

This tagging procedure can easily be formalized in one of the available notations (Yngve 1984, forthcoming) as

PT x I x ROG x TOH :: -I,

which we read as "the logic expression 'Playing Tag and It and Recognizing the Other as in the Game and Touching the Other with one's Hand' becoming true causes the 'It' property to take the value 'not It'". This means that whenever these conditions occur in the individual, the procedure executes and the individual becomes "not it".

And the difference between simply being touched on the shoulder and being tagged is also in the procedures that execute. This also depends on the conditional properties at the time, which record the relevant context.

For a person to be tagged he must have the conditional properties of playing tag, of being "not it", of recognizing the other as being "it" and in the same game, and he must have received the energy of a touch by that other person. Under these circumstances the energy of the touch will trigger a procedure that will change his conditional properties to "it", and he will have been tagged. This can be written as

PT x -I x ROI x ROG x ETO :: I,

which we read as "the logic expression 'Playing Tag and not It and

Recognizing the Other as It and Recognizing the Other as in the same Game and receiving the Energy of a Touch from the Other' becoming true causes the 'It' property to take the value 'It'".

This method of handling contextual factors is very general. It serves all the way from top to bottom, including the treatment of phenomena traditionally seen as pragmatic, semantic, syntactic, and phonological. However little work has been done so far in using the available notations to produce detailed analyses of how people communicate.

Note that procedures are not rules; they are special laws that are postulated on the basis of observational evidence and can be tested. A rule is something a person can follow or not as he chooses, whereas a law always holds. When people communicate, it is not like Alice in Wonderland; we are not free to say anything we please and expect to be understood. It is impossible to be tagged and not become "it", for that's what tagging is. Procedures record all the contextual constraints on behavior and what executing the procedure does by way of changing the context. Apparent free variation is an invitation to do further research to discover additional constraints.

Note also that with an adequate method of taking contextual factors into account, ambiguity is no longer a big problem. Human linguistics does not embrace the absurd idea of disambiguation, that there are a number of "meanings" of a touch on the shoulder that a person has to sort through and choose among each time he is touched. The incoming energy simply triggers the appropriate procedure depending on the conditional properties of the receiver of the energy. If the conditional properties in the individual are as stated above, the touch is not just a touch, it is part of being tagged, and the child reacts appropriately. Other possible "meanings" of being touched on the shoulder simply do not come into question at all.

4. Tasks and subtasks

Executing a procedure or a group of procedures can be viewed as executing a task. It is often possible to analyze tasks as organized into subtasks and subsubtasks. Thus the task of playing tag has a subtask of tagging another person. There may be other hierarchically intervening tasks such as locating the nearest other person, chasing that person, cornering him, and so on. These tasks probably belong not to linguistics but to an analysis of playing tag. However the hierarchy of tasks extends right down through linguistics, where in the case of speech the human linguistic task and subtask organization resembles the phrase-structure organization of sentences.

When a child tags another, he may be doing more than just making a move in the game. He may also be engaged in a task of

ganging up on a certain other child, or in helping another child. These can be taken into account through multiple conditions for the execution of procedures, and the execution of multiple procedures in parallel. Linguistic behavior often has multiple causes, and the organization of tasks and subtasks is often not simply a phrase-structure-like hierarchy.

Thus we see how linguistic subtasks serve to coordinate nonlinguistic tasks. Indeed there is a close relation between theories in human linguistics and theories of the nonlinguistic activities that are being coordinated, such as playing tag. This is another advantage of human linguistics: its nonautonomy and nonisolation from other disciplines. We are free to set up disciplinary boundaries to suit our research purposes, and it is easy to do interdisciplinary research. Human linguistics therefore becomes more relevant to the needs of neighboring disciplines. This results from its pragmatic aspects.

5. Some comparisons

There are a number of other matters in human linguistics that we have not discussed, particularly the fundamental laws on which human linguistics rests, the treatment of foundational properties, the treatment of groups of communicating individuals, and the treatment of the complex relations of the individual to the group and the group to the individuals that make it up, but these have been treated elsewhere (Yngve forthcoming). Nevertheless this simple tag example allows us to point to a few of the major differences between human linguistics and the more traditional linguistics of language.

Human linguistics is a scientific linguistics, not a grammatical linguistics. It provides theories of real objects, people, rather than of language, which is not a real object and can not be studied scientifically. It is founded on laws rather than on a priori assumptions. It incorporates no special assumptions such as Bloomfield's assumption. It accepts only the standard assumptions of science, which have developed over the last several hundred years and have been spectacularly successful in the physical and biological sciences.

Human linguistics does not start from the "utterance", but from the observed people who communicate. Communicating individuals are theories of real people based on objective evidence rather than on intuitions. It does not involve introspective or phenomenological concepts. It does not use the idea of grammaticality; grammaticality is an epiphenomenon. It does not postulate a "language" to be understood, or even a "game", but studies what the people are actually doing. It is an embedded linguistics. One might say it is a functional linguistics, but it does not deal with the function of language, for it does not assume language. It has no concept of sign, or of language as a relation between

sound and meaning. It has no need for a concept of "meaning", yet it answers questions about how people understand. As for pragmatics, it becomes not the "use of language", but simply the scientific study of how people communicate. As such it is a part of science, thus ending the forced autonomy of linguistics and its comparative lack of relevance for the concerns of its sister disciplines.

In a true science, theories can be tested and verified. This buys us a lot, for when someone makes linguistic claims, you don't have to take them on faith, or agree with someone's arbitrary assumptions, you can test the claims yourself against objective evidence. Therefore we can have a scientific discipline rather than a debating society arguing the relative merits of different arbitrary assumptions or different people's intuitions.

Science does not follow gurus. It is open-minded and tolerant of reasonable hypotheses as long as they can be tested, and it proceeds to test them. All theories are tentative. Everyone is entitled to push his own new theory, but in a true science there is an ultimate authority, namely the comparison of theoretical statements with the reality given in nature, and there is no appeal from that authority.

NOTES

1. I should like to acknowledge discussions with D. N. Honorof, Lynn MacLeod, and Tatsuroh Yamazaki on the game of tag as a paradigm example for human linguistics.

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III

HISTORICAL STUDIES

19th CENTURY FORERUNNERS OF MORPHEME THEORY

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Linguistics in the 19th century was dealt with on a diachronic basis. Linguists (grammarians or glottalists, as they have also been called) have worked on linguistics mainly from a historical point of view, emphasizing especially the classification of languages according to word forms. Looking at word forms, they were bound to recognize minimal working units and recurrent partials -- be they meaningful or not. European linguists of the 19th century also tended to classify languages according to their value, often viewing Latin as the purest and most highly developed language. It was claimed that the highest and most perfected forms of languages were the inflecting ones and it was, moreover, assumed that all languages would undergo a change and eventually would become inflecting. In spite of these biases, linguists of the 19th century and before were already dealing with the concept of the morpheme as a minimal unit. As the reader will notice, no specific definition of the morpheme or the word is given. The approach followed here is Kilbury's (1976:1). The ideas presented will be combined and compared in the conclusion. The terms used in the course of the paper are those used by the authors under discussion. In the following a survey of the use of the morpheme concept will be given by means of selected examples which do not claim completeness but seem to be a basis for a more extensive investigation.

The Greco-Roman tradition lacks morphological analysis. Still, the grammar of Dionysius Thrax (around 100 B.C.) has some kind of concept of the bound morpheme, even though it does not recognize meaningful units smaller than words. It draws a distinction "between compound words whose parts are equivalent in shape to separate words, and those whose parts are not, but can nevertheless be recognized as recurrent elements of word formation." (Kilbury, 1976:7) The grammarians and linguists of later centuries have been strongly influenced by the Greek and Latin grammars. "The typical European model of grammatical description continued to be the one handed down by Dionysius Thrax and Priscian, a thorough-going word-and-paradigm one." (Robins, 1979:147) Changes in the approach to language cannot be found until the 19th century "which saw the development of modern conceptions, theoretical and methodological, of comparative and historical linguistics." (Robins, 1979:164)

Indian grammarians, "recognize morpheme-like units." (Kilbury, 1976:8). This is ascribed to the structure of Sanskrit. Greek and Latin show a relative stability of written and spoken

forms and, therefore, grammarians did not "seek smaller meaningful units." (1976:8) "Panini's descriptions, on the other hand, involve the isolate identification of roots and affixes, which directly inspired the morpheme concept of present-day grammatical analysis." (Robins, 1979:147) Moreover, Panini seems to have used first the concept of zero representation to explain irregular forms of morphemes (for example, the loss of the thematic vowel, see Fig. 1). This is a concept widely used in linguistics today, where "a morpheme is represented by a zero-morph, i.e. with no overt exponent in the phonemic material." (1979:148) Robins (1979) gives an example of zero-representation, adapted in the following:

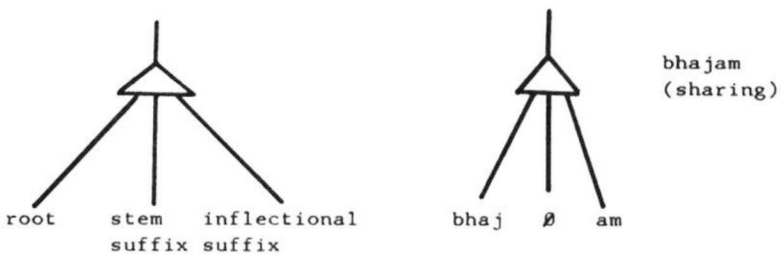
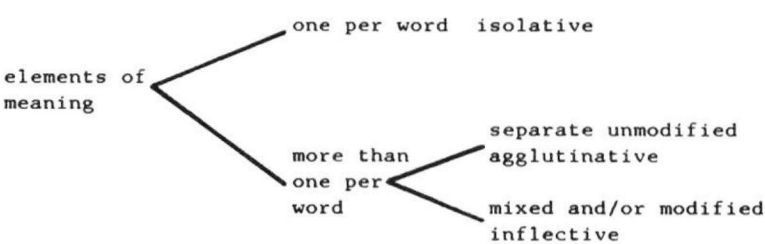


Fig. 1

In 1818 A.W. Schlegel proposed a typological classification of languages "based on the number of meaningful elements (morphemes) which could be present in a word and the modifications these might undergo." (Arlotto, 1972:29)



in: Arlotto (1972:30)

Fig. 2

Following this classification, some linguists, including Schlegel, saw languages as changing throughout history and tending to evolve to the 'highest level' -- an inflective language. This is, therefore, not a mere classification as there is the tendency to ascribe an order of historical priority, with

the inflective languages being the goal. "All languages begin at an isolative stage, then move to an agglutinative stage and finally reach an inflective stage ... It is interesting to note that such opinions were formulated by individuals who spoke Indo-European languages." (1972:31).

Like Schlegel, August Schleicher (1821 - 1868) classifies languages according to their morphological properties. Schleicher is, by the way, probably the first linguist to use the term 'morphology' "als die aeussere Beschreibung der Formen einer Sprache, welche auf deren Funktion und Bedeutung keine Ruecksicht nimmt (Beneš, 1958:112). In his Compendium he subdivides grammar into 'formenlere' or 'morphologie', 'phonologie', 'funktionslere' and 'syntax' (1871:1).

Dealing with the form of the Indo-Germanic word, he explains his understanding of word formation.

> Unter wurzel versteht man gewoehnlich die bedeutungslaute, die traeger der bedeutung in den vor ligenden worten... Jedes indogermanische wort laesst sich also als ein ganzes betrachten dass auss mereren, zum mindesten auss zwei wurzeln almaehlich erwachsen ist; von disen wurzeln ist eine, die erste, die wurzel des wortes im engeren sinne... dise ist die alleinige traegerin der bedeutung, waehrend die anderen, diser hauptwurzel als suffixa angeschmolzenen wurzeln zum aussdrucke der beziehung herabgesunken sind. (1871:330)

Schleicher, furthermore, tries to describe different languages with one system and comes up with mathematical formulae to do so, Benes (1958:112) summarizes Schleicher's ideas:

A - root with concrete meaning

A' - auxiliary root, paraphrasing the relation

A^{a} - root that can be changed to show relation

a - stem constructing element (thematic vowel)

$\alpha_{1,2}$ - personal and case endings

A^{A} - to express tone

Therefore, the morphological form of a word in Chinese would be:

A + A'

and in an Indo-European language (here: Sanskrit)

a
A a (see example in Fig. 1)
a
A a a (thematic: bharami, with 'bhar' being the root, 'a' the thematic vowel to form the stem and 'mi' the ending)

Etymologically connected languages can have different morphological forms, whereas, unconnected languages can show morphological similarities. (Beneš, 1958:112) Schleicher's system shows a division of the word into several parts which could also be called morphemes, if the morpheme is understood to be a minimal unit of meaning.

Otto von Boehtlingk (1815-1904), a German scholar who studied under Bopp (1791-1867), published, in 1851, Ueber die Sprache der Jakuten. Aside from Yakut, Boehtlingk was interested in Sanskrit. This interest is sufficiently indicated by the publication of a Sanskrit dictionary and a translation of Panini's grammar. His knowledge of Sanskrit and of Panini's grammar influenced his treatment of Yakut. In the introduction to Ueber die Sprache der Jakuten, the reader is made familiar with Boehtlingk's theory of language. Boehtlingk criticizes Schleicher's bias against non-Indo-European languages. Schleicher, who looks at language from a purely historical point of view, comes up with statements like "weil in jener Periode die Sprache ueberhaupt noch nicht fertig war." (1964:VII). But, Boehtlingk retorts, language is "(zu) der Zeit ihrer Entstehung bis zum Untergang sowohl fertig als nicht fertig." (1964:VII)

Boehtlingk also looks at language diachronically and sees the task of the linguist as trying to discover the historical sequence of word formation and the prototypes of currently existing word. He writes,

> (ist) eine Sprache zu einer Anzahl von Formen auf dem Wege der Zusammensetzung gelangt, so koennen sich aus den vorhandenen Formen durch Antreten neuer, in anderer Verbindung erscheinender Formelemente, die aber immer wieder auf selbstaendige Woerter zurueckgehen, neue Formen entwickeln. (1964:IX)

New words are created not only by composition but also by "symbolische Veraenderungen im Innern des Wortes" (1964:X) or with today's terminology -- alternation.

Words are a combination of content (Stoff), form (Form) and tone (Ton). The question now is how content and form are connected. In this respect, Boehtlingk cites Wilhelm von Humboldt whose theory of historical word formation reads as follows. Language originally denoted objects only and "ueberlaesst das Hinzudenken der redeverknuepfenden Formen dem Verstehenden." (1964:XVII) This process is then eased by the addition (in

historical sequence) of a certain arrangement of words (syntax) and of relation words. The relation words are at first loosely affixed and later fully incorporated into the word, showing a pure expression of relation and thought.

Following Humboldt's theory, Boehtlingk then adds the importance of tone, "Worteinheit wird zunaechst dadurch erreicht, dass zwei urspruenglich selbstaendige Woerter unter einen Hauptton gestellt werden." (1964:XVIII) If one of the originally independent words can no longer appear by itself, it becomes a 'Formelement' (morphological element) and only has meaning in connection with the 'Stoffwort' (contentword). Boehtlingk classifies words by their function into

content words (independent) and

morphological elements (occur only in bound form)

and subdivides the latter into

. word-forming ('wortbildend) and

. word-inflecting ('wortflektierend').

The combination of a content word with either a word-forming or a word-inflecting element results in, respectively, a derived word ('abgeleitetes Wort') or an inflected form ('Flexionsform'). 'Childhood', for example, is a derived word formed from the content word 'child' and the word-forming element '-hood', a derivational suffix in today's terminology. The inflected form 'child's' is composed of the content word 'child' and the word-inflecting element ''s' - in today's terminology, an inflectional suffix. The concept of the morpheme here is already present. In an introductory course to linguistics, Boehtlingk's content words would be called free morphemes and his morphological elements bound morphemes. Both are understood to carry meaning.

Boehtlingk's advances in linguistics are not very well known to 20th century linguists. But he gained recognition with Ueber die Sprache der Jakuten. He is, for example, cited in A.H. Sayce's Introduction to the Science of Language of 1890. Sayce's approach to word formation differs from Boehtlingk's in that Sayce speaks of roots and suffixes. Still, the concept seems to be basically the same in that it recognizes meaningful recurrent partials.

Sayce (1845-1933) sees the agreement between Indo-European words and suffixes as being a grammatical not a lexical relationship. He describes the root as

> the first syllable, or the first two syllables, of a group of words which agree in their general meaning, (whereas) suffixes are ... the comparatively small number of syllables in which words terminate, whatever

their roots may be. (1890:XXIII)

Suffixes can be divided into three classes:

- classificatory (defining the word class)
  [example: ion, ism for noun formation]

- flectional (defining the relation of a
  word to the rest of a sentence)
  [example: s for third person singular verbs]

- functionless

These classes are by no means exclusive; a suffix can be classificatory in a certain context and flectional in another. This definition is no longer in use today for English. Inflectional suffixes (flectional) are a limited class, and derivational suffixes (classificatory) would not be interchangeable with inflectional suffixes.

Languages differ from each other in the structure of the sentence (and, therefore, the structure of thought) and the grammatical relationships of its parts. Sayce describes roots as the elements that form speech, which are not equal to any "constituent of living speech ... Roots ... are phonetic types, the moulds into which we pour a group of words allied in sound and meaning." (1890:3/4) They form the ultimate elements of language.

Every language has different concepts of roots, as in some only a CV - combination is possible, whereas in others consonant clusters are allowed etc. Moreover, roots can be mono- or polysyllabic. Apart from the words they occur in, roots have no existence. It would be difficult to adequately compare Sayce's view of roots and suffixes to today's understanding of morphemes. He views language diachronically and tries to determine the function of roots and suffixes accordingly. Still, a relation-specific division of roots and suffixes is available according to their function in word formation and in the sentence as a whole.

The Swedish scholar Noreen (1854-1925), often considered to be the first stratificationalist, divides grammar into three main areas, phonology, semology, morphology, with the latter being the most important part. Morphology shows the way in which the phonemes are assembled to become 'Sprachformen' which serve as the basis of semantics. (Pollack, 1923:41) Phonology deals with the physical components of language, whereas semology deals with ideas that can be expressed through speech sounds that have a "Bedeutung... d.i. das Vermoegen, eine Idee auszudruecken und vor allem bei einem anderen hervorzurufen." (1923:199) For this idea, Noreen coins a new word - the sememe - defining it as a unit of language which can have a different appearance under certain conditions and which expresses a specific conceptual content. Therefore, 'triangle' and 'trilateral linear figure' are the same sememe, i.e. they are homosemes, because the word as

well as the phrase both express the same meaning. In this respect, Noreen also views the German diminiutive '-chen' as usually belonging to the same sememe as the adjective 'klein'. The discussion of the sememe at this point seems important because "jedes Morphem ist ein Semem, wenn auch bei verschiedenen Anlaessen ein anderes, und jedes Semem ist ein Morphem, wenn auch seinerseits bei verschiedenen Anlaessen ein anderes." (1923:200) A sememe, therefore, is the meaning of a morpheme.

Morphemes are only available to a language in a limited number. However, the number can change. At times, all morphemes may have to be 'polysem' (carry several meanings and, consequently, represent several sememes.) Often, the polysemic meaning of one morpheme is obvious; but considering morphemes like 'I' or 'here', Noreen thinks that the former "hat stets eine andere Bedeutung, der Verschiedenheit der Personen entsprechend," and the latter "bezeichnet gewoehnlich verschiedene Oertlichkeiten." (1923:212)

To fully understand Noreen's concept of the morpheme, his concept of the phoneme has to be discussed first. A phoneme is a sound or a sound sequence, described as follows

1. Speech Sound (example /k/)
2. Cluster (example /kr/)
3. Syllable (example /kray/)
4. Foot (example Paris)
5. Phrase (example 'that man on the corner')

(Johannesson, 1977:222)

A morpheme has to be meaningful; the first occurrence of meaning in the above categories is number three. A syllable does not necessarily carry meaning (see Pa- in Paris) but it can, as shown by the above example. "The morpheme is (then) defined as a meaningful speechform, expressed by a phoneme," (1977:224) not as a minimal meaningful unit. It is divided into dependent and independent morphemes. The former can occur as affix (prefix or suffix), affixword (function words) or word affix (a special case form of the word.) The latter shows "two main tactic levels: words... and constructions." (Pollack, 1923:225)

> Wir koennen also sagen: Wort ... ist ein selbstaendiges Morphem, das mit Ruecksicht auf Laut und Bedeutung von unserem Sprachsinne als Einheit aufgefasst wird, sei es nun, weil es nicht in kleinere Morpheme zerlegt werden kann ... oder, weil man, wenn es auch zerlegt werden kann, doch an die spezielle Bedeutung dieser kleineren Morpheme nicht denkt oder nicht denken will ... Die Einheit beruht darum nicht, wie einige gemeint hatten, auf der Einheit der Vorstellung oder Idee, die das Wort bezeichnet, sondern ganz und gar auf der Art und Weise, wie der Ideeninhalt bezeichnet

> wird - auf der Form, durch die die Bedeutung erweckt wird - indem das Wort die Idee gleichsam in einer Dosis, nicht tropfenweise, verabreicht. (1923:446)

A contemporary of Noreen, Baudouin de Courtenay (1845-1929) started his studies at a time when Schleicher's ideas were dominant. He even met Schleicher during an educational stay in Jena in 1867/68 and later gave a paper about him. Baudouin did not agree with Schleicher's idea that language and philology are two separate disciplines and that "Sprache (ist) ein Naturorganismus von autonomer Existenz," (Haeusler, 1968:29) and followed Steinthal's ideas. Steinthal (1823-1899) saw "Spracherscheinungen als eine Widerspiegelung der ausseren Wirklichkeit in der Seele des Menschen." (1968:127)

In Russia, Baudouin was the first to examine languages from a typological point of view. His view differed from that of the Germans,

> (dass) man statt der unbegruendeten Unterscheidung von 'flektierenden' und 'agglutinierenden' Sprachen ... von der Verschiedenheit zwischen der Verknuepfung der Morpheme untereinander und den psycho-phonetischen Alternationen der gleichen Morpheme sprechen sollte. (1980:191/192)

He did not follow the idea of a historical sequence of morphological types or any values connected with them. Rather he used phonetic typology to find unifying features in structures of unrelated languages.

Baudouin developed an alternation-theory which not only involved anthropophonic and phonetic but also morphologic and etymological criteria. He can also justly be called the father of phonology, even though he does not completely separate the concepts of phonetics and phonology. "Dieses Problem ist spaeter von L.V. Scerba (1880-1944) aufgegriffen worder, der als bedeutendster Schueler Baudouins gilt." (Haeusler, 1968:129) Scerba, in turn, exercised a great influence on Daniel Jones. Another famous disciple of Baudouin's 'psychological phoneme-theory' is N.S. Trubetzkoy, whose idea of the morpheme is discussed below.

Language is considered to be a "psychologic - sociological phenomenon" (Stankiewicz, 1972:20) with the morpheme "endowed with the psychological autonomy (and the phoneme) as the psychological equivalent of a speech sound." (1972:152/153) The "morphology together with semasiology and lexicology (is) the central aspect of language." Stressing the field of morphology, he perceives it to be the true part of linguistics as "it exists exclusively in language and nowhere outside language." (1972:37) This is in contrast to semasiology, which "deals with extralinguistic representation." (1972:37) Later he "defines

morphology more generally as the combination 'of objective phonology' and 'objective semasiology.'" (1972:37)

Morphology and phonology cannot be studied "without the concept of the phoneme." (1972:24), which has two aspects: the phoneme as a "mobile component of a morpheme, as a marker of a given morphological category (and as the) unified, discrete sound (which) is the result of the sum of generalized anthropophonic properties." (1972:25)

His concept of the morpheme originated in his earlier works where he tried "to identify the basic units of the sentence and the word, (naming) 'words and fixed expressions' 'the syntactic atoms' (and) 'roots in the broad sense' 'morphological atoms'". The latter he later called the morpheme, extending the basic idea to "cover any component of a word." (Stankiewicz, 1972:36) The morpheme is defined as

> that part of a word which is endowed with psychological autonomy and is for the very same reason not further divisible. It consequently subsumes such concepts as the root (radix), all possible affixes (suffixes, prefixes), endings which are exponents of syntactic relationships, and the like. (1972:152-153)

Phonemes are constituents of morphemes. Baudouin treats "the etymological relationships of the morphemes ... as an etymolgical relationship of their particular phonemes and their combinations." (1972:156)

Baudouin uses synchronic analysis, a process very unfamiliar to linguists of their time, even though already known to "Indian scholars (who) covered virtually the whole field of synchronic linguistic studies." (Robins, 1979:137)

> The dichotomy of synchrony and diachrony is fundamental here, since both linguists (Baudouin and his pupil Kruszewski) see phonetic law as a synchronic notion involving active forces at work in a language, as opposed to the diachronic correspondence of sounds linking them as correlatives in a single language or as cognates in different languages." (Kilbury, 1976:21)

Baudouin's work in the field of phonetics, phonology and morphophonemics has failed to be appreciated by many of the linguists following him. He is not very well known among Western linguists and has only fairly recently been recognized for his ideas (Haeusler:1968, Stankiewicz:1972, Kilbury:1976). Robins (1979:204), for example, only mentions him in one paragraph and credits him with the first use of 'fonema' (phoneme), a term Baudouin himself credits to Kruszewski.

N.S. Trubetzkoy (1890-1938) has been greatly influenced by Baudouin. "Trubetzkoy arbeitete in seinen fruehen phonologischen Abhandlungen mit dem Lautvorstellungsbegriff, der auf Baudouin zurueckgeht." (Haeusler, 1968:128) In Grundzuege der Phonologie, Trubetzkoy gives an account of his understanding of the morpheme. A uniform theory of combination covering all languages is an absolute necessity as the basis for comparison and a subsequent typology. The rules of combination presume a higher phonological unity.

> In vielen Sprachen muss als eine solche Einheit nicht das Wort, sondern das Morphem betrachtet werden, d.i. ein Phonemkomplex, der in mehreren Woertern auftritt und dabei mit derselben (materiellen oder formalen) Bedeutung verbunden ist. (1967:225)

To strengthen this point, Trubetzkoy shows by means of German examples the importance of using the concept of the morpheme. A medial sound in a German word can have a number of consonants as in 'Axtstiel' [kstst]. It would seem difficult, if not impossible, to find 'Kombinationsregeln' on the basis of the word. Therefore, he proposes to rather use "die phonematische Struktur der Morpheme, aus denen die deutschen Woerter bestehen, (welche) ziemlich klar (ist) und ganz bestimmten Kombinationsregeln unterliegt," (1967:225), i.e. the division of the words into morphemes at the 'Morphemfuge'. He then proposes that the first function of each 'Kombinationslehre' is to find the morphemes or the phonological units.

Consequently, the second task is then the "zweckmaessige Einteilung der Rahmeneinheiten (Woerter bzw. Morpheme) mit Hinblick auf ihre phonologische Struktur." (1967:225) Using German as an example, Trubetzkoy proposes to divide the morphemes into "betonungsfaehige und betonungsunfaehige." The former can have primary or secondary stress and several syllables, whereas the latter occur without any stress and consist of one syllable or less.

His idea goes into far more detail than outlined here. He claims that only after the 'Kombinationslehre' of numerous languages has been researched, a 'Kombinationstypologie' can be found by comparing those languages.

In the above survey the concept of the morpheme has been presented in selected examples. Even though the actual term -- morpheme -- was not used until the end of the 19th century, related ideas can already be seen as early as 400 B.C. Panini's morpheme-like concept influenced later linguists. Boehtlingk uses the terms 'Wort' and 'Element' for a notion similar to Panini's 'root' and 'suffix'. 'Stoffwort', in Boehtlingk, appears to have the same function as Panini's root, except that it can be independent and can also occur with 'Formelementen' (as Panini's root can occur with stem- and inflectional suffix).

Schleicher makes a useful tripartite distinction of the root

into independent [A], auxiliary [A'] and changeable [A] forms. His approach here is actually synchronic, as such, that is if only this classification is considered. He looked at several languages and then tried to imagine a system that covers them all. Realizing that roots can occur in different forms, he divises his system accordingly.

Schleicher, Boehtlingk and Sayce add another dimension to their theories of word formation -- tone or stress. Stress is also the main distinction in Trubetzkoy's treatment of the morpheme. But Trubetzkoy's stress should not be confused with the others' because his basis for morphemic division is phonology. Noreen expands the morpheme concept to cover not only minimal units of meanings but also units of meanings of larger sizes up to phrases. He is also the first to separate the concept of meaning from the morpheme -- calling it a sememe.

In the development of linguistic theory in the 19th century, a drastic shift from diachronic to synchronic linguistics takes place. Initiated mainly by Baudouin de Courtenay, this change coincides with the introduction of terms like the morpheme. The morpheme is one notion -- among many others -- that might have been needed to look at language synchronically in an effective way. After Baudouin, the term morpheme becomes fully incorporated into linguistic terminology.

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THE RISE OF THE PERIPHRASTIC VERB FORM IN OLD ENGLISH

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The rise of the periphrastic verb form in Old English to indicate various semantic aspectual meanings formerly signalled by inflection is the result of phonological change that occurred prior to historic Old English. This change affected the inflectional suffixes so much that a form, previously phonologically distinct and which had signalled only one function, no longer did so. The coalescence of form was unsystematic, affecting only those inflections which contained the specific sounds undergoing change, irrespective of suffix meanings; not all allomorphs of a morpheme were affected, only those containing the affected sound(s). Because of the coalescence of form and concomitant blurring of meaning distinction, the verbal form/function/meaning system had to be completely restructured. Another mechanism had to emerge so that the individual meanings could be individually conveyed. This was the periphrastic verb cluster in which one verb in the cluster had acquired auxiliary status and new meanings with which to modify the clausal meaning of the main verb. The verb cluster functions as a unit with the main verb in it, and not the auxiliary verb, determining the semantic roles of the clause nominals.

The phonological change that caused the need for the restructuring of the verbal form/function/meaning system was not restricted to the verbal system; it simultaneously affected the nominal form/function/meaning system so that it also required restructuring. The response in the nominal system differed from the response in the verbal system; word order indicating the various grammatical relationships of the nominals replaced inflectional indication of nominal semantic role relationships (discussed at previous LACUS Fora). In the verb system the periphrastic verb cluster supplanted inflectional indication of the various aspect and subjunctive meanings. The morphological functions that were affected were those of mood, person, number, verb type, verb class, principle part form, whichever meaning the affected suffix carried. The result of all this is that in Old English

(1) the present indicative 1 sg. form and the present subjunctive 1-3 sg. forms are identical: 'singe';

(2) the present indicative 1-3 pl. forms and the imperative 2 pl. form have coalesced: 'singað';

(3) the preterite indicative 1 and 3 sg. forms are the same: 'song';

(4) the preterite indicative 2 sg. form and the preterite subjunctive 1-3 sg. forms are alike: 'sunge';

(5) the strong verb present subjunctive 1-3 pl. forms and the past participle form are indistinguishable: 'healden';
(6) the weak verb preterite indicative 1 and 3 sg. forms and the preterite subjunctive 1-3 sg. forms do not differ: 'bodade';
(7) the infinitive marker -an, the past participle marker -en, and the preterite plural marker -on are often indistinguishable because the suffix vowel was reduced to schwa so that the inflection occurs alternately as -un, -an, or -en regardless of meaning (cf. citations 7, 9, 14a, 14b, 16a, 16b, 18, and 20 below).
(8) verb type, class, part, mood, and tense are obscured: the Class I weak verb present indicative 'fremmen' resembles both the past participle form 'riden' and the Class I weak verb preterite subjunctive 1-3 pl. form 'smeaden';
(9) the weak verb preterite singular and the weak verb past participle forms are identical: 'gehorsude' (cf. 11 below).

The sameness of form and the resultant semantic ambiguity detailed above were resolved by the rise of the periphrastic verb form in which certain main verbs acquired auxiliary status and aspectual meanings in addition to their main verb status and specific meanings. If a function can no longer be determined by one form, something else has to take over for that form. Furthermore, the language itself has to provide an antecedent inventory for the prototype(s) developed during the restructuring. Analysis of the Old English data shows that there are two antecedent prototypes for the development of the periphrastic verb form to indicate aspect. The first is the two-verb sentence in which both verbs are main verbs with the first verb of the cluster inflected, the second in the infinitive or participle form, and both having a separate subject:

1) þe him Metod tæhte [inflected] wadan [infinitive ofer wealdas Genesis A 2886
[when God directed him to traverse over forests < 'God directed him' and 'he traverses over forests']

2) seo þe mid Wealdende wunian [infinitive] þenceð [inflected] Dream of the Rood 121
[who thinks to dwell with God < 'he thinks' and 'he dwells with God']

3) þa se æþela wong...wið yðfare gehealden [past participle] stod [inflected] hreora wæga Phoenix 43
[then the noble plain stood protected against the flood of rough waves < 'the plain stood' and 'X protected the plain']

The main verb status of each verb with each having a separate subject is irrelevant to the innovation process. What is pertinent is the overt form of the two-verb cluster: one verb inflected and the other in the infinitive or participle form, this cluster within the sentence looking as if it were made up of an auxiliary verb and a main verb.

The second antecedent prototype consists of those main verbs that have acquired auxiliary status and new meanings while maintaining their main verb status and original meanings. The first instance of this was when "in the Older Germanic languages...quite early auxiliaries 'shall', 'will', 'must', 'may', while retaining their specific meanings became indicators of futurity (Priebsch and Collinson 327), and after that when auxiliary status and perfect or passive meanings were assigned to the main verbs 'habban', 'beon', and 'weorþan' sometime prior to historic Gothic and Old English. The main verb status and the auxiliary status of these three verbs and the specific meanings assigned to each status continued on throughout the entire Old English period, shown below:

Main Verb Status and Specific Meanings:

4) ond he hæfde [MV] þæt bisceoprice 1 wintra æt Scireburnan Anglo-Saxon Chronicle 867
[and he had that bishop's seat one winter at Sherborne]

5) ond þær nan hefelic gefeoht ne wearþ [MV] Anglo-Saxon Chronicle 868
[and there no heavy fighting occurred]

6) wæs [MV] his noma Eomær Ælfred Bede's 'Ecclesiastical History' Book II, Chapter IX
[his name was Eomær]

Auxiliary Status--the perfect with 'habban' or 'beon':

7) and hie hæfdun [Aux] hiera cyning aworpenne [MV] Anglo-Saxon Chronicle 867
[and they had deposed their king, Osbryht]

8) is [Aux] nu sæl cumen [MV] þæt me weorðiað...menn Dream of the Rood 80
[the time has now come that men honor me]

9) her wærun [Aux] reðe forebecna cumene [MV] ofer Norþanhymbra land Anglo-Saxon Chronicle 793
[here dire portents had come over Northumberland]

--the passive with 'beon' or weorðan':

10) eall þæt beacen was [Aux] begoten [MV] mid golde Dream of the Rood 6
[all that beacon was covered with gold]

11) and þær gehorsude [MV] wurdon [Aux] Anglo-Saxon Chronicle 866
[and there (they) were provided-with-horses]

Analysis of the Old English data shows that the auxiliary/aspect system is fully developed. It also provides support for the argument that the auxiliary status of the involved verbs is a later acquisition added to the original main verb status and specific meaning so that either auxiliary or main verb function can be called into play. The new auxiliary system replaces the inflectional indication of various aspectual functions after the coalescence of form had caused the inflectional system to lose the capacity to differentiate meaning. The main verbs in Old English which carry auxiliary status and aspectual meaning come from the preterite-present class of verbs, the group of anomalous verbs, and the Class 3 strong verbs. They are

cunnan: be able, can (auxiliary meaning)
know, understand (main verb meaning)

durran: dare, presume, venture (auxiliary meaning)
(no main verb meaning or usage)

magan: be able, may, can (auxiliary meaning)
avail, prevail, cause (main verb meaning)

motan: be permitted, may, must, be obliged (auxiliary meaning)
(no main verb meaning or usage)

onginnan: to begin--onset of happening (auxiliary meaning)
(no main verb meaning or usage)

sculan: shall, may, ought, be obliged (auxiliary meaning)
owe (main verb meaning)

ðurfan: need, require (auxiliary meaning)
need, require (main verb meaning)

willan: be on the point of, be in the habit of, future marker (auxiliary meaning)
wish, want, desire (main verb meaning)

Of these verbs only five maintain the double capacity of specific main verb meaning and status along with the acquired auxiliary status and aspectual meanings:

12) and ic þone weg ne <u>can</u> [MV] <u>Prose Saint Andrew</u> 304
[and I didn't know the way]

and he <u>cuðe</u> [Aux] be dæle Lyden <u>understandan</u> [MV] Ælfric <u>Preface to English Genesis</u> 22
[and he could understand a little Latin]

13) gif ðu <u>meht</u> [MV] <u>Kentish Glosses</u> (Zupitza) 52
[if you prevail]

ne magon [MV] ure woruld frynd us ðonne ænigum gode Wulfstan Homilies (Napier) 151, 12
[our friends avail us nothing then]

gif he self to nauhte ne mæg [MV] Ælfred Gregory's 'Pastoral Care' (Sweet) 7, 12
[if he causes naught for himself]

þæt he meahte [Aux] hearpian [MV] þæt se wudu wagode Ælfred Boethius' 'Consolation of Philosophy' (Sedgefield) 101, 5
[that he could play-the-harp so that the wood moved]

14) Gif hwa oðrum scule [MV] borh oððon bote Laws of Ethelred (Thorpe) i, 308, 31
[If who owes bale or recompense to others]

þe þa burga healdan [MV] scolden [Aux] Anglo-Saxon Chronicle 893
[who must hold the strongholds]

15) ne ðearf [MV] he nanes þinges buton ðæs Exodus 425
[he doesn't need anything but this]

Costontinus...hreman [MV] ne þorfte [Aux] mæcan gemanan Battle of Brunanburh 38
[Costontinus didn't need to exult about shared swords]

16) ælc mon hæfþ ðone friodom ðæt he wot hwæt he wile [MV] hwæt he nele [MV] Ælfred Boethius' 'Consolation of Philosophy' (Fox) 242, 20
[each man has the freedom that he know what he desires, what he does not desire]

swa hie hit habban [MV] wolden [Aux] Anglo-Saxon Chronicle 874
[as they would have it]

The verbs 'durran', 'motan', and 'onginnan' do not maintain their original main verb status in Old English; they have only auxiliary status (an extensive search of the Old English texts revealed no instances of main verb usage):

17) and we ne durron [Aux] na mare awritan [MV] on Englisc Ælfric Preface to English Genesis 83
[and we do not dare write more in English]

18) and hyt motan [Aux] habban [MV] Ælfred Orosius' 'History' 118
[and we must have it]

19) ða ongan [Aux] mon secgan [MV] be ðæm hearpere Ælfred Boethius' 'Consolation of Philosophy' (Sedgefield) 101, 6

[then one began to say about the harper]

Even though 'onginnan' in some sentences gives the appearance that its main verb status has been maintained along with its auxiliary status, this is not the case. Analysis of multiple occurrences of 'onginnan' shows that it carries only auxiliary status and aspect meaning in Old English, having lost its main verb status prior to historic Old English, just like 'motan' and 'durran' did. Sentences in the pattern of (20) misleadingly suggest by their form that the main verb status for 'onginnan' continued on in Old English:

20) þa hie ða þæt geweorc furþum ongunnen [past participle form/surface MV] hæfdun [Aux for perfect] Anglo-Saxon Chronicle 895
[when they then indeed had begun (to do) that work]

However, although 'onginnan' appears to have main verb status because it carries the past participle suffix and is not inflected while 'habban', indicating the perfect, is clearly inflected, thereby revealing its auxiliary status, analysis reveals that 'onginnan' is an auxiliary verb only indicating aspect and not a main verb. The main verb has been omitted from the sentence ('to do' in the gloss of 20). It was omitted because periphrastic three-verb clusters do not occur in Old English . Therefore, because of this restriction 'onginnan' assumes the outward form of the main verb, even though it is not the main verb. If (20) were not in the perfect, then 'onginnan' would be inflected for tense and number as is required for verbs with auxiliary status, while another main verb would be used as in:

21) ða ongan [Aux] ic...ða boc wendan [MV] on Englisc Ælfred On Learning (Cassidy and Ringler) 34
[then I began to turn the book into English]

A sentence like (22) cannot and does not occur in Old English.

22) *þa hie ða þæt geweorc ongunnon [MV]
[when they then indeed began that work]

Bosworth-Toller and Visser show no citations for onginnan in the pattern given in (22). Bosworth-Toller comment that 'onginnan' always occurs with a separate main verb in the infinitive form.

Much more inflectional confusion was current throughout all of the historic Old English period than is admitted to today (illustrated in 7, 9, 14, 16, 18, and 20 above). Inflectional coalescence of form is a reality in Old English. It could only be the result of phonological change prior to Old English. Furthermore, the normalized texts found so often today instead of texts that mirror the Old English condition support the idea that the inflections are individual and indicate separate meanings by denying the form coalescence and inflectional confusion.

The time of occurrence culminating in the development and use of the periphrastic verb form with aspectual meaning had to be prior to historical Gothic and Old English as both languages show all the sentence patterns and inflectional forms discussed above. This strongly suggests that the phonological change causing the restructuring with acquisition of auxiliary status and associated perfect, passive, and aspectual meanings could well be a development of Common Germanic or earlier. In no way could the disarray of the inflectional system extant throughout all of the Old English period have been the result of change during historic Old English as the entire inflectional system was affected. The use of the periphrastic verb form to handle the various aspectual meanings is actually an innovation. Analysis shows that the innovation process followed all the rules necessary to create something new, from the reworking of the antecedents to form the prototypes, to completion of the innovation and subsequent utilization of it in the language (cf. Barnett, 1953, for the processes of innovation).

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ON THE HISTORY OF ROMANIAN

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Romanian is a Romance language spoken in the fairly large (c. 91,000 sq. mi.) Eastern European country of Romania and also beyond its present borders, chiefly in the Soviet Republic of Moldavia (which was the Romanian Province of Bessarabia before World War II). A notable fact about Romanian is that, unlike the other Romance languages, it is isolated from its sister languages and is nearly surrounded by Slavic languages. (Cf. Map I.) Also notable, but not surprising, given its location, is that its lexicon is loaded with borrowings from Slavic (including important, everyday words like neck, cheek, wall, glass, empty, rich, sick, to strike, wound, flag, dear, expensive, to love, advice, war, 100, ink, habit, rest, to feed, to pay, to get, to read, etc., etc.)[1] and it has no ancient Germanic loanwords.[2] By every test except phonology it is the most eccentric (or deviant from the common norm) of all the Romance languages, exceeding even French (which, however, is not far behind in most respects and is way ahead in phonology).[3]

MAP I -- The Romance Languages Today

(After Encyclopaedia Britannica s.v. Romance Languages)

Among its pecularities is that its definite article is enclitic (carte 'book', cartea 'the book', lup 'wolf', lupul 'the wolf'), that it still has a dative-genitive case in its noun system (floare 'flower', florii 'of the flower', lupii 'the wolves', lupilor 'to the wolves') and that it doesn't use infinitives much in verbal constructions (Vrea să meargă 'He wants that he go' rather than *Vrea merge 'He wants to go'). Finally, and this is very important, there are three dialects of Romanian (that now have only a few speakers) that are spoken in places separated from Romania by 200 to 300 miles (see Map I) but do not differ very greatly from standard Romanian; and within Romania itself dialectal variation is slight in spite of the fact that Wallachia and Moldavia were not united until 1861 and that the western half of the present country (Transylvania, Bucovina, Maramureş, Crişana, and Banat) was not added until about 60 years ago. Because Romanian is spoken, partly at least, on the territory of the ancient Getae or Dacians that was conquered by the Emperor Trajan, it is natural to suppose that Latin has survived there from Roman times to the present, as it has in Italy, Spain, and France; and so, in fact, those who have thought about the matter superficially have supposed at least since the 14th century, when certain Italian humanists became aware of the existance of Romanian. Thus in many places one may read statements like the following which I quote from two encyclopedia articles:

> "The Roman colonists formed the Latin-speaking nucleus that established the Romance tongue, Rumanian, which is still spoken in the region,"

and

> "Walachia was part of the Roman province of Dacia and has retained its Romance speech despite centuries of invasion and foreign rule."

Only rarely does one find the following opinion (and here I am quoting from a history of the Roman Empire published at the beginning of this century):

> "It seems on the whole unlikely that the Roumanians of today are descended from Latin-speaking inhabitants [of Dacia] who clung to their old homes." (Jones 1908:340)

Although there have been Romance scholars of stature who have dissented, the idea of Latin-continuity today prevails almost uncontested. Whether this is because we prefer to think about historical grammar and take the history of the language for granted or because we prefer a simple explanation to a complicated one or because we assume that Romanian scholars must obviously know more about the history of their own language than any foreigner can hope to, I do not know. If it is the last, we should be on our guard, for the Romanian viewpoint is not precisely disinterest. It is obviously more flattering to the Romanians to believe that they descend from the brave subjects of King Decebalus and civilized Romans than to suppose they come from wild, migrating barbarian hordes of Germans, Magyars, or Slavs, like most of the rest of us.

But even more important is that the continuity hypothesis is the one decreed officially correct by the Romanian government, so that any Romanian scholar who opposed it would not get his views published. The continuity hypothesis has to be upheld because approximately the western half of Romania belonged to Hungary before 1918, still has a large Hungarian-speaking population, and is still claimed by Hungary. If the continuity hypothesis is correct, Hungarians are intruders and Hungary has no right to the territory. If it is wrong, Romanians are the intruders and Hungary has a right to take it back.

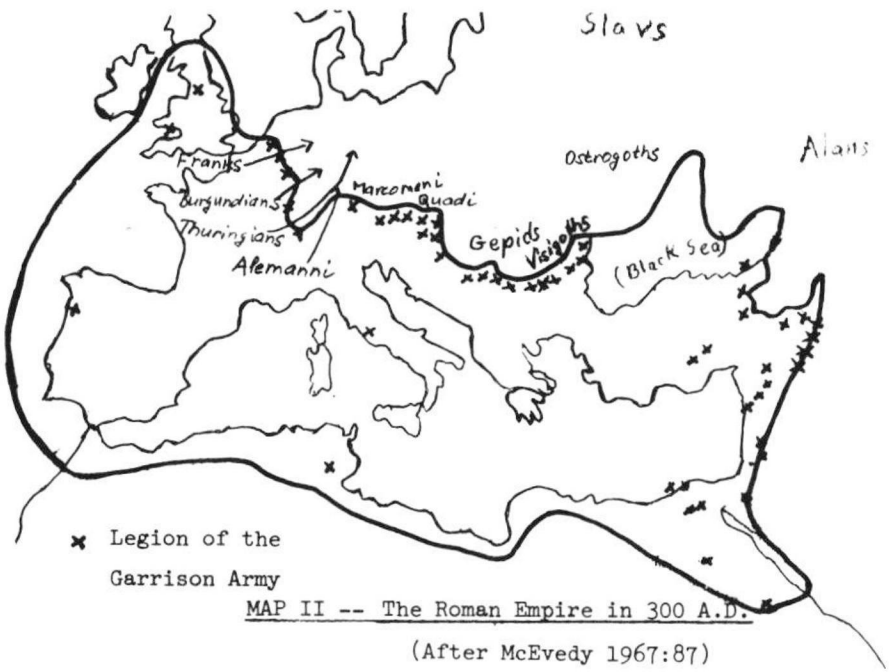
I shall not review the history of the argument except to say that the German historian Rösler seems to have been the first to seriously contest the continuity view in 1871 and that his arguments convinced not only Gaston Paris but the pioneer Rumanianists F. Miklosich and G. Weigand, who had previously believed Romanian was native to Romania. Most Romanians rejected Rösler's views immediately and entirely, but Ovid Densusianu invented a sort of compromise, according to which Romanian had developed on both sides of the Danube, and that view is still presented in some Rumanian works (e.g., Rosetti 1973).

To evaluate the hypothesis of the continuity of Latin in Dacia-Romania we shall have to embark on a rather long historical excursus.

Rome's conquest of the Mediterranean World outside Italy began in the 3rd century B.C. as a consequence of its first war with Carthage (264-241 B.C.). By the middle of the 2nd century B.C. Rome held most of Spain, the Mediterranean coastline of France, and most of the Balkan Peninsula south of the Danube. By the death of Caesar (44 B.C.) more of Spain, all the rest of France, some of North Africa and Asia Minor were held. By the death of Claudius (54 A.D.) Rome held England, all Spain, all the coast of North Africa, all Asia Minor, and all Europe to the Danube and the Rhine—i.e., almost exactly what is indicated in Map II, which is for 300 A.D., when Rome had retreated from its maximum expansion reached under Trajan. It was not until 106 A.D., when the Roman Empire reached its greatest territorial extension, that the Romans conquered Dacia, two and a half centuries after they had taken the Illyria (c. 160 B.C.) and Macedonia (148 B.C.).

The circumstances of the conquest of Dacia seem to make it clear that Trajan's purpose was not to add a profitable province to the Empire but to destroy a dangerous foe. The Dacians had menaced Roman Macedonia in the time of Caesar but then had been quiescent until about 85 A.D., when under their energetic king Decebalus they made incursions into Moesia, killed its governor and destroyed a Roman garrison, and then destroyed a Roman army that pursued them back into Dacia. By 89 A.D. Domitian had arranged a peace that apparently was not a victory, for Rome agreed to pay Decebalus an annual subsidy to keep him outside Roman territory (i.e. north of the Danube). Domitian put 10 legions along the Danube frontier and peace held for 10 years. Trajan, intending to put a definitive end to the Dacian menace, made extensive preparation for invasion in 101-2, took the Dacian capital, Sarmizegetusa, and forced Decebalus to become a client king. But in 105 Decebalus rose again, destroyed a Roman garrison and raided Moesia. Trajan returned with

an army of 120,000 men and completely destroyed the Dacian forces. Decebalus killed himself and it is thought that most of the Dacians were dispersed. At any rate, it is said that Trajan forcibly repopulated the territory with colonists from Asia Minor and Syria as well as from other parts of the Empire except Italy. (Trajan had decreed the prohibition of migration from Italy to newly founded colonies.) It is to be noted that the eastern border of Trajan's Dacia followed the line of the Olt River and then the Carpathian Mountains. Hence what are now the Romanian regions of Muntenia and Moldavia, the heartland of the present Romanian nation, remained extra Provinciam, as even Romanian historians acknowledge. (Cf. supplementary maps 2 and 3 in Pascu 1974.) Dacia Trajana prospered for a time. Some native villages and Roman garrisons became municipia or coloniae, and a few fora and one amphitheater have been found by Romanian archaeologists. But by 200 A.D. Roman Dacia was nearly surrounded by hostile Germanic tribes, and it was invaded in 251. A few years later, in the reign of Gallienus, the northern part of the province was surrendered, and in 271-275 the Roman soldiers and colonists were evacuated by Aurelian, who settled them south of the Danube in Moesia and Thrace, where a new Dacia was formed to inherit the name of the old one. It would seem that the original Dacia must now have been inhabited entirely by Gothic speakers, as indicated on Map II. Note especially the heavy line of fortification along the Danube on this map. Clearly the Danube was again the northern frontier of the Empire, as it had been before Trajan, and Dacia Trajana was outside it and in the possession of Goths. (The Gepids were also Gothic.)



MAP II -- The Roman Empire in 300 A.D.

(After McEvedy 1967:87)

Romanian historians and linguists claim that although Rome withdrew officially from Dacia, there can be no doubt that most of the population (Latin-speaking Dacians, of course) stayed behind because they had homes, farms, businesses there. Non-Romanian historians say Dacia was "abandoned" (Boak 1955) or "evacuated" (Jones 1908).

To me it seems interesting to compare Dacia to other parts of the Roman Empire, both those parts that became and remained Latin-speaking and those that either never were linguistically Romanized or did not remain Latin-speaking. All the lands that are Romance-speaking today were conquered at least a century and a half before Dacia and remained in the Empire for about two centuries after Dacia was abandoned. Much territory that was conquered well before Dacia and was given up by Rome long after Dacia did not become or did not remain Romance-speaking (N. Africa, Austria, Yugoslavia). It is especially interesting to compare the case of Dacia with that of England. Caesar invaded England briefly in 55 B.C. but withdrew. There were at least superficial contacts between the English Celts and Roman Gaul during the next hundred years. England was conquered (43-45 A.D.) under Claudius, and it remained in the Roman Empire until 410. Whereas Rome held Dacia 169 years, it held England 365—more than twice as long. In Dacia, Roman archeology remains are sparse. In England they are plentiful. The difference in their road systems is especially significant. (Cf. map on pp. 18-19 in von Hagen 1967.) There are not one half dozen Roman place names surviving in Romania, whereas there are dozens—or scores—in England. (Cf. names ending in -caster, -cester, -chester [e.g., Lancaster, Gloucester, Manchester] from Latin castra; in -wick [e.g., Warwick] from Latin vicus, in -coln [e.g., Lincoln] from Latin colonia.) Yet England did not become Latin-speaking.[4] How can we believe that the population of Dacia did so? This would seem to be possible only if Trajan really exterminated or expelled the Dacian population and replaced it with Latin speakers. But that is most unlikely. The term "repopulate" is probably a hyperbole. If none of the hostile native population remained, there would have been no need for the Roman garrisons that were established in central parts of the new province. Moreover, it is unlikely that colonists from Syria and Asia Minor would have spoken Latin. Finally, given the choice of re-settlement behind a line of fortifications or being overrun by Goths and being held outside those fortifications, it is not likely that many Romans would have stayed in Dacia when the garrisons left. But if indeed a Latin-speaking population had remained in Dacia Trajana after the withdrawal of Roman troops and administrators, it would have been exposed to Germanic influence for more than 300 years; for although the Visigoths moved on to Italy, France, and finally Spain after about 100 years in Dacia, the Gepids apparently stayed on until they were destroyed by the Avars and Lombards in 568. Yet even though Romanianists—especially Romanian Romanianists—have tried, no one has yet found one certain Gothic borrowing in Romanian. There are, on the other hand, many and very important Slavic loanwords and even Slavic derivational morphemes (-eală, -an, -nic, -ită) and Slavic calques in Romanian. There are, in

fact, more Slavic words in Romanian than Latin words.[5] And, as far as it is possible to differentiate, all the earlier Slavic borrowings are from South Slavic, not from West Slavic or East Slavic, to which Romanian would have been equally exposed if it had always been spoken in Romania. Finally, there are two more considerations, one minor and one major. The minor point is that at the time the Magyars and Poles were Christianized, c. 1000, the Kingdom of Hungary included all of Rumania; and all of the Kingdom of Hungary was converted to Western (or Catholic) not Eastern (or Orthodox) Christianity. Yet the Romanians were at first (and still largely are) Orthodox.

The more important matter is that Romanian shares some very significant traits with Albania (which many consider to be a survival of the ancient Illyrian language), and nobody thinks that Albania was ever spoken in Dacia.[6] It appears that the two languages must have been in contact for some time and that the contact must have taken place south of the Danube.

Because we lack the kinds of historical evidence we have for the western Romance languages we cannot be sure where the Romanians came from. Four possibilities occur to me:

1. The Romanians were originally in some completely different, completely Romanized part of the Empire (e.g., Central Italy or Southern Spain) and moved en masse to Dacia and in small groups to Istria, northern Greece, etc. The objections to this possiblity are so obvious I won't bother to state them.

2. Romanian has been spoken all over Modern Romania (= Roman Dacia) without interruption since the 2nd century A.D. Macedo-, Megleno- and Istro-Romanian were carried from Romania to their present locations by small groups of migrants after the Slavic invasions. The objections to this supposition are the unlikeliness of such rapid Romanization, the unlikeliness that Romanization would have survived the Gothic and later invasions, the absence of Gothic elements in Romanian, the very strong presence of South Slavic elements, the evidence that Romanian and Albanian must have been in contact, the relative uniformity of Romanian over a great area, the Orthodox religion of the Romanians.

3. Dacia was thoroughly Romanized, but with the Gothic, Hunnish, Avar, Slavic, and Magyar invasions the Romance population, much reduced, took refuge in the mountains and began to repopulate their lands only in the 11th or 12th century. This makes the survival of some form of Latin plausible (if we accent the premise of the original Latinization of Dacia Trajana), but all the other objections (uniformity that could not be expected in a language spoken over a large territory during a thousand years with no sort of central government or other unifying influences, absence of Germanic elements and abundance of South Slavic features, etc.) remain.

4. A final possibility is that Romanian is the language of what remained, after the South Slavic invasions of the 6th and 7th centuries, of the once thoroughly Latinized population of the Blakan Peninsula between the Danube and Greece, somewhere in the area corresponding to

modern Serbia, Macedonia or Bulgaria (not too far from where Macedo-Romanian is now Spoken). After living among Slavs for several centuries they would have migrated across the Danube into Romania after the nomads abandoned it, perhaps as late as the end of the 13th century. Although there is no proof that this last supposition is correct,[7] it is at least plausible; and, unlike all the others, it does not conflict with any known fact. On the contrary, it accounts for precisely those facts which conflict with all the other hypotheses.

NOTES

[1]The Romanian words are: gît, obraz, zid, sticlă, gol, bogat, bolnav, a lovi, rană, steag, drag, scump, a iubi, sfat, război, sută, cerneală, obișnuință, odihnă, a hrani, a plăti, a primi, a citi. By some counts more than 60% of the Romanian word stock in Slavic.

[2]Cf. Rosetti 1978:244-5; Tagliavini 1962:256-7.

[3]Cf. Izzo, 1979. Consider the following sentences in four Romance languages: 'I have received a book from a friend'.

Span.: He recibido un libro de un amigo.
Ital.: Ho ricevuto un libro da un amico.
Fren.: J'ai recu un livre d'un ami.
Rom. : Am primit o carte din un prieten.

'The language of the Eastern Empire began in the 5th century to diverge from Western Latin.'

Span.: La lengua del Imperio oriental comenzó en el siglo V a diferenciarse del latín occidental.
Ital.: La lingua del Imperio orientale cominciò nel secolo V a differenziarsi dal latino occidentale.
Fren.: La langue de l'Empire oriental commença au V^{e} siecle à se differencier du latin occidental.
Rom. : Limba din Imperiul de răsărit a inceput in secului al V-lea să se deosebească de latina din apus.

[4]Where the Romans lived and ruled, there Roman ways were found. Four great highways soon spread fanlike from London to the north, the northwest, the west, and the southwest, while a fifth cut across the island from Lincoln to the Severn. Numerous lesser roads connected important military or civil centers or branched off as spurs from the main highways. A score of cities and more than a hundred towns, with their Roman houses and baths, temples and occasional theaters, testify to the introduction of Roman habits of life. Under the relatively peaceful conditions that existed everywhere except along the frontier, there is every reason to think that Romanization had proceeded very much as it had done in the other provinces of the empire. The difference is that in Britain the process was cut short in the fifth century." (Baugh 1978:45) In Dacia there was only one principal highway. (Cf. von Hagen 1967:19.)

[5]Cf. Rosetti 1973:64.

[6]Cf. Du Nay 1977:49-71

[7]There are, in fact, some uncertain historical indications of Romance speakers in the Balkan Peninsula mentioned in Du Nay 1977. (Du Nay's book, although badly written and very badly organized and hard to follow, deserves to be better known and to be taken seriously. Although the author is practically innocent of linguistic sophistication and makes some elementary blunders, the mass of information he has assembled destroys the hypothesis that Romanian descends from the Latin of Dacia Trajana.)

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A RELATIVE MATTER

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Recent study has indicated that the two most frequent canonical forms in LL (Lislakh) are CVC(C) and CCV(C). As the latter structure is generally avoided in several of the language families, such as Egyptian and Semitic, a prothetic ʔV- is added when this form is utterance initial (or after certain open junctures). It is a very frequent pattern in Egyptian (Hodge forthcoming). It is not as common in Semitic. Likewise, CVCC is not generally found before open juncture. The most frequent realizations of the two patterns are:

CVCC			CCVC	
CVCC-	CVC(V)C	-CCVC	ʔV-CCVC	C(V)CVC
before -V	before -C, #	after V-	after #	after #

(V) indicates the vowel inserted to break the cluster. These may be illustrated from Akkadian and Arabic:

CVCC-V	Akk.	kalb-um	'dog'
CVC(V)C		kalab	'dog' (in construct) (Soden 1952.19)
-CCVC	Ar.	ya-ktub-u	'he's writing'
ʔV-CCVC		ʔu-ktub	'write!' (Wright 1933.1.57, 62)
C(V)CVC		k(a)tab-a	'he wrote'

(The last example needs explanation, which will appear elsewhere. Compare qaal-a 'he said' from *qwal-a. *qawal-a would remain, as would *qawl-a. The pattern is therefore CCVC, and the (V) is a; the passive is based on CVCC.)

Given such demonstrable developments, one may ask whether some of the forms beginning with ʔ-, and where ʔ- is usually considered to be a root consonant, belong to the ʔV-CCV(C) pattern. The example we have chosen is the Semitic root for 'brother', which is (along with that for 'father') anomalous. Some of the forms are:

	Sg.	Construct	Suffix	Plural
Akk.	ʔaxum	ʔaxi /OA ʔaxuu	ʔaxuu- /ʔaxaa-	ʔaxxuu
Ar.	ʔaxun	ʔaxuu	ʔaxuu-	ʔixwatun /ʔixwaanun
Heb.	ʔaaḥ	ʔ^{a}ḥii	ʔaaḥii-	ʔaḥiim
Geez	ʔex^{w}		ʔexu-	ʔaxaw
	Acc. ʔexwa		Acc. ʔexwaa-	
Ug.	ʔax		ʔix- /ʔux-	

We note (1) the occurrence of -w- in some forms (2) the long vowel after x in construct and suffix forms (3) the variation in the initial vowel. (Sources: Soden 1952.45, 82, 86, 76. Wehr-Cowan

1961.9, sub ?xw. Bauer-Leander 1962.524. Lambdin 1978.386. Aistleitner 1963.11-12.)

These phenomena have led to a number of explanations. For example,

(1) The root is *?-x, and the w is an extension (Brockelmann 1961.124, 331-32).

(2) The root is *?-x-w, and the w is lost or replaced by vowel length where it does not occur (Bravmann 1977.124-30). That this idea is an old one may be illustrated by Schaaf's Syriac lexicon, where he speaks of a third radical He or Waw being 'restored' in some forms (1717.11).

(3) The root is *?axaa, with a basic long vowel (Bauer-Leander 1922.450; see also 615).

(4) The root is *x-w; so Dallet, without argumentation or reference (1982.912).

The last is the view taken here, with the addition that there was also an alternate *x-y. The latter would account for Heb. ?aaḥiikaa as against Akk. ?axuuka 'your brother', though this could also be simply due to the vowel (*xwi > xii, *xwu > xuu, *xwa > xaa). As xy occurs elsewhere, it is likely to have occurred in Semitic. (Cf. Bauer-Leander 1962.524, Bravmann 1977.)

Our interpretation calls for prothetic ?V-, so *?V-xw-. We note that the quality of the vowel ?V- varies: ?a-, ?i-, ?u-, ?e-, ?^{a}-. This is in keeping with its prothetic (automatic) nature; it is there to meet the demands of the canonical form. One also notes Ar. ?axú (observed as so stressed by a Saudi speaker). While Semitic thus clearly reflects the prothetic nature of the ?V-, it just as clearly does not reflect the general need for it. That is, the ?VCCV is in most cases replaced by ?VCVV or ?VCV, and in such cases there is no need for a prothetic vowel. At this point the vowel is no longer automatic but has become part of the stem. It may well be that this is the case in proto-Semitic. Comparative evidence, particularly from Egyptian, shows that ?V- was prothetic at an earlier stage, say proto-Lisramic or proto-Lislakh.

There are also Semitic forms without ?V-, as Aram./Syr. ḥaataa 'sister', E. Neo-Aram. xətə 'sister' (Rosenthal 1967.2.2.29, 87, 104), Tigrinya ḥaw 'brother', Tigre ḥu (Appleyard 1977.10). These may have lost ?V- or they may reflect a CVC pattern. The latter occurs with Hebrew ḥawwaa 'Eve' (Gen. 3.20, < *xVw, but with a pun on ḥaay < ḥayy 'living').

The semantic range of our root includes not only 'brother' but 'kinsman', as in Ar. ?axuu tamiim 'one of the tribe of T.' (Wright 1933.2.204). The kinsman concept also enters into proper names, where it is to be understood as a tutelary deceased relative (cf. Hodge 1971, 1983 re *?il-), not a deity as generally understood (cf. Soden 1965.1.21).

There are also derivatives with such meanings as 'fraternize' (Akk. ?axuu Gt, Soden 1965.1.22), 'pair off' (Št, ibid.), 'each other, one another' (Akk. ?axaa?iš, ?axmaxam, etc., 17, 21).

The Egyptian evidence is partially in dispute, and the material brought together here should help to resolve some of the

points at issue. The following items appear to be relevant:

1. The hieroglyph for x (Aal), identified by Sethe as the placenta, a view thoroughly endorsed and given further support by Blackman (1916ab). The ensuing controversy is not yet settled. Gardiner gives 'placenta (?)' (1957.539, ad Aal), as does Faulkner (1962.182).

2. The word written variously xw, xy, xwy, x (but always with Aal; Posener 1966.118n29) and usually translated 'child' aut sim. (Erman-Grapow 1957.3.216, Faulkner 1962.182 et al.).

3. The combination ḥr xw (Gardiner 'in exclusion of') in w^c ḥr xw-f 'exclusively unique', nn wn ḥr xw-f 'there is none beside him', no one survived ḥr xw-? 'except me' (Gardiner 1957.133; see also Erman-Grapow 1957.3.216.7 and Belegstellen 69).

4. The title r-x-nswt, taken by Sethe to be ?ry x nswt 'one pertaining to the placenta of the king', endorsed by Blackman (1916ab), Frankfort (1948.69-78) and others; included in the Wörterbuch (Erman-Grapow 1957.2.446.9). This has met stiff resistance, with several rival translations sharing the field: rx nswt 'an acquaintance of the king' (Erman-Grapow 1957.2.446.10 for Middle Kingdom) or 'one who is known to the king' (Fischer 1964.82), ?ry ?xt nswt 'one concerned with the affairs of the king' (Edel 1955.29, with reference to Gunn) or 'one concerned with the king's property' (Fischer 1960.310), and more recently 'the King's personal servant' (Hodjash-Berlev 1982.33, with references).

5. The words xnw and nxnw, both 'child' (Faulkner 1962.192, 138).

6. The name of the moon-god xnsw 'Khons', taken by Blackman to be 'placenta of the king', i.e., the placental twin of the sun = the moon (1916b). Posener points to the punning of xnsw with xns 'traverse' and also the interpretation as xy n nsw 'child of the king'. As the former involves ritual punning (cf. Firchow 1953), and either may be popular etymology, these can carry little weight.

The first four are the most important to our thesis. If the other two prove to be connected, they add further weight. The archeological and anthropological materials brought to bear on the identification of the placenta and its importance in Egyptian thought by Seligmann-Murray (1911) and Blackman (1916ab) are to me convincing (as they were to Frankfort). They make cultural sense of the phenomena involved. The placenta was believed to be the twin of the child and it received special attention. Representations of the birth of a royal person show two children (see, e.g., Frankfort 1948 Fig. 23). That x (Aal) is the placenta is reinforced by items 2-4.

That a word for 'child' should be associated with the root for 'placenta' seems very natural. One may conjecture that it was originally confined to the placental twin. In fact, it is probable that in some of the passages where xy occurs it should be translated 'placental twin'. The occurrences are largely in spells in which the deceased is identified with one thing after another, the being which would assure him/her immortality. Certainly identification with the placental twin of Osiris, Re, the

king, aut sim. would be thought to confer this benefit. E.g., BD 42 S1 'I am the child [xy]... I am the God's vertebra' (Allen 1974.48) could well be 'I am the placental twin' etc. Item 5, xnw and nxnw 'child', may be based on the root x(w) and are therefore included, but without further discussion at this time.

The expression ḥr xw-X 'and X's xw' is best understood if xw is 'placental twin'. Hence 'one and his placental twin' = 'he alone', 'there is none besides his placental twin' = 'he is all alone', no one survived 'besides my placental twin' = 'besides myself'. The twin concept also helps us understand the reciprocal uses of the root, Semitic examples of which were given above.

It follows that the title r-x-nswt is most reasonably to be taken as ʔry x(w) nswt 'one pertaining to the placenta of the king', i.e., 'a close blood relative of the king'. This makes eminently good sense culturally, those relatives favored by the king being among those rich enough to afford to leave monuments we can read.

The Blackman etymology of Khons is also appealing, although one must admit that 'placenta of the king' might also be a popular etymology. We note only that Blackman's interpretation fits well into the overall picture of xw.

The probable Berber cognates are

1. *whh/*hhw 'be born' (Prasse 1973.3.143-44).
2. Old Libyan w, Touareg ăw 'son of' (Prasse 1972-74.1.158, 2.43).

The feminine is wəlt 'daughter of'. This has been taken to be related to Sem. *wld, but it is more likely that it is from *xw-l-t, with an l extension (cf. Eg. xnw 'child', and East Cushitic forms in -l-) and feminine -t.

Prasse takes Tou. ăw to be from *ă-wihih (2.270). This seems unlikely in view of the other forms we have brought together. I would take both *hhw and w/ăw from *xw, *whh being due to metathesis.

In Chadic we find

1. The root for 'mother'. Skinner has North Bauchi *max- (1977.32), Jungraithmayr-Shimizu have *y- (1981.185). A check of Kraft's 1981 lists shows forms with y and also with w (Hwona ʔìya and mùwà, Bachama nùwo). Hausa has ʔuwaa 'mother; placenta' (cf. Coptic maau 'mother; placenta'). One should therefore reconstruct *xwV/*xyV. Where a prefix occurs, we have *mV-xwV, *nV-xwV; otherwise there is a prothetic vowel: *ʔV-xwV (> ʔuwaa, with assimilation of ʔV to w after loss of x) and ʔV-xyV (> ʔìya, with assimilation of ʔV to y). With cluster simplification (xy > y) one may have loss of the prothetic vowel, as in Boka yă. It is possible that x has survived as h in Miya mà-hi-n. (Examples, except for Hausa, from Kraft.)

2. The root back of 'son', 'daughter', 'brother', 'sister'. Here the root is *xw, with stem extensions in s and n: *xwV-s, *xwV-n. (*xy is also possible for some forms.)

The x is preserved, in the data available to me, only in Boka (Central Chadic): xwəyà 'son', xwənù 'daughter', xwânya 'brother, sister' (Kraft 1981.2.43). Gava (also Central Chadic) has dùɣwà

'daughter', may reflect *-xw- (3.123).

Our *xwV-s is given as *ws 'brother' in Jungraithmayr-Shimizu 1981, our *xwV-n as *wn 'child'. Similarly, Skinner has North Bauchi *w-š- 'brother' and *wun- 'girl, daughter' (West Chadic, 1977.14, 23).

3. The root for 'bear a child', reconstructed by Newman as *wa (occurring in West and Central Chadic; 1977.22). Jungraithmayr-Shimizu have *y-/*w- or *yw (1981.117). These must be from *xwV and *xyV. Some of Skinner's data belong here rather than from *vurd?- (1977.23).

Considering the above data, it seems likely that the following forms in Cushitic go back to *xwV/*xyV or *xVw/*xVy. (Sasse thinks a proto *x may have existed in East Cushitic [1979.20-21].)

1. *aayo 'mother' (Sam [part of Lowland East Cushitic], Heine 1978.73). *yaayo/*?aayo 'mother' (proto-South Cushitic, Ehret 1980.317). Probably from *xy, possibly reduplicated, *xyV-xyV. Another possibility is *xVy.

2. *ha-/*ya- 'child, offspring' (proto-Rift, Ehret 1980.384), *hawa/*yawa 'children' (proto-Rift; 380). Ehret thinks there may have been a confusion of roots, such as *ya?- and *haw- (384). It seems far more likely that we are dealing with forms from *xwV/*wyV and *xVw.

3. *weil, pl. *wèìl-?ál 'child', *wàl?áál 'brother', *wàl?áal 'sister' (Sam, Heine 1978.76). From *xwV-l/n- (see above).

4. Specific language data, not yet correlated with other languages and reconstructed. E.g., we find in Dullay (an East Cushitic group):

Harso, Dobase and Gollango ahάah-o 'great-grandfather', alaw-ho 'brother' (cf. aláw-ce 'sister'), Gawwada alawxo 'brother' (Amborn et al. 1980.147, 235). These also appear to come from *xw.

The root is widespread in IE, with forms based on *xVw, *xwV, as well as affixed and reduplicated forms.

1. *xVw in Arm. haw, Lat. avus 'grandfather' (Winter 1965. 102). Zero grade (?) in Lyc xugaha 'to those of the grandfathers' (Rasmussen 1974.53). Reduplicated in Hitt. xuxxas, Lyc. (H.H.) xuxa 'grandfather' (ibid.). Sturtevant reconstructs *xauxos 1942.62).

2. *xwV is much more frequent, as is the case in Lisramic. *xwV-n (with loss of w) in Hitt. xannas 'grandmother', Lyc. xñna 'mother' (Rasmussen 1974.54), Lat. anus 'old woman', and in Hitt. xanzassa- (kin term), Milyan (Lycian B) qñza [xw-] 'to the families' (ibid. 56).

*xwV-r in Milyan ñqre- [ṃxwre] 'ancestors' (with nasal prefix; ibid. 60-61).

With unclear suffix(es): Lyc xahba 'son-in-law' (ibid. 54).

*xwV-s is clearly attested in Anatolian and Iranian: Hitt. xas- 'beget', xassa- 'grandson', Lyd. eśa-v 'grandson' (Acc.sg.) and related words (Rasmussen 1974.53, Mezger 1939). Pers. xʷe:š, Mod. Pers. xiš 'self, relative' (Horn 1893.114, with other Iranian). It has been pointed out that this is connected with OP uva

'self' (cf. Mann 1893.704); see below.

*xwV- survived in Iranian also in the word for 'sister': Late Av. $x^{v}aŋha$, Pers. $x^{w}a{:}har$, Mod. Pers. xahær, Baluchi gvaha:r (Geiger-Kuhn 1901.33.34). This has been taken - quite without phonological justification - as from sw-, citing Skt. svásar-, Goth. swistar, etc. More recently, Hoenigswald and Hamp have both considered Iranian x as a possible survival (Hoenigswald 1952, Hamp 1965.132). An alternation *xw-: *sxw- was found, which, though not applied by them to 'sister', would fit it perfectly. Iranian reflects *xwV- (*xwesor?), Sanskrit *sVxwV- (*səxwesor?), with a prefix *sV-. In much of IE the -əx- is lost, which has given us the traditional reconstruction *swesor- (e.g., Watkins 1969.1544). As the stress would not fall on it, -əx- is lost without trace. Stressed -ə́x- would have yielded -ə́:-, according to the laryngeal hypothesis.

*sVxwV- also occurs with loss of w: Hitt. isxās 'lord', isxassaras 'lady'. The latter is therefore the same base as Skt. svasar-. One loses w, the other x. This suggests that the meaning of isxās and isxassaras is related to kinship.

An noted above, reflexive *xw is also found in IE (Mod. Pers. xiš 'self'). ʔV-xwV- is the base of OP uva- 'self' (with the assimilation of ʔV- to w after loss of x), Av. $x^{v}a$-, Gk hé, hós, Mod. Pers. xod. Skt. sva-, Lat. sē, suos go back to *sV-xwV. (Cf. Kent 1950.177 for forms.) Iranian gives us the evidence for x, as in the case of 'sister'.

There are a number of hitherto ill-identified IE words which may plausibly be derived from *xw. These include: Lith. vaikas, OPruss. waix 'boy' (contra Buck 1949.89). Upper Sorbian wuj 'uncle', cousin'. OP viθ- 'house, royal clan', Av. vīs- 'Herrenhaus', Gk. oϝkos 'house', Lat. vīcus 'village' (Kent 1950.208). These examples indicate that words previously thought to refer to settlements as habitation really refer to the kin group inhabiting them.

The reflexes of *xw in IE are seen to have a semantic range very similar to the rest of LL, the two main meanings being terms for kin, especially close kin, and reflexive. The meaning 'placenta', attested in Egyptian and Chadic, is a reasonable reconstruction for the proto meaning, hence LL *x-w 'placenta'.

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TABLE OF SELECTED FORMS

	V	-	C	C	V	-		
Egyptian			x	w				placenta, child
Semitic								
Geez	ʔ	e	x	ʷ				brother
Chadic								
Nbauchi	*m	a	x-			-		mother
Hausa	ʔ	u		w	aa			mother
Hwona			x	w	ə	-	yà	son
Berber								
pBer	*h		h	w				be born
OLyb				w				son of
Cushitic								
pSam		*aa	-	y	o			mother
				w	ei	-	l	child
PSC			*h		a			child
Indo European								
ClPers.			x	w	a:	-	har	sister
Skt	s			v	a	-	sar	sister
Hitt			x		a	-	s -	beget
			x		a	-	nnas	grandmother
Lat					a	-	nus	old woman
Cl Pers			x	w	e:	-	š	self
Greek			h		e			self
			C	V	C	-		
Semitic								
Tigriña			h	a	w			brother
Indo European								
Arm			h	a	w			grandfather
Lat				a	v	-	us	grandfather

CLASSICAL PHILOLOGY, COMPARATIVE STUDIES, AND THE EMERGENCE OF LINGUISTIC SCIENCE: **The Case of Georg Curtius (1820-1885)**

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Classical philology stood at the cradle of historical language study on the verge of developing into modern linguistic science. It watched over the growth of the emerging new scientific discipline during the greater part of the 19th century with an attitude partially of outright aloofness, partially of slightly amused envy and puzzled amazement on the one hand and of profound willingness to seize the opportunity for offering constructive cooperation and making solid contributions on the other; and this after having staged a series of foiled attempts at asserting a dominant leadership role in the widely perceived climate of far-reaching, if not drastic, change.

From the beginning to the end of his scholarly career Georg Curtius was firmly entrenched in the grounds of classical philology. But unlike many of his peers, his staunch adherence to well-established principles of the past upon which classical philology for a very long time had built a thriving existence, did not prevent him from keeping open to change, even though this change originated within a framework of thought to which he found it - sometimes - difficult to accommodate.

He was an inspiring and influential teacher of men like August Leskien, Hermann Osthoff, Karl Brugmann, Eduard Sievers, and Wilhelm Braune, scholars largely responsible for the shift in the focus of attention from classical philology via comparative studies to the minute analysis of phonological and analogical language changes which characterized the maelstrom of linguistic activities in the late 70s and 80s of the last century. Since, however, the achievements of these and all other Neogrammarian scholars began to captivate the minds of many of their contemporaries, at least some aspects of Curtius' work - and with it the actual range of his influence - suffered curtailment, distortion, and misrepresentation.

The adverse effect on his overall evaluation has persisted to this very day.

The present paper will attempt to rectify this state of affairs and restore Georg Curtius to the place of distinction which he rightfully deserves by arguing for the correctness of the belief expressed by Ernst Windisch in his obituary of Curtius: "Without Georg Curtius the history of linguistics is unthinkable. If he is left out, gaps will appear which destroy all continuity. Whenever he is discussed, an important segment of the history of our science is discussed likewise." (Windisch 1886:128. Translations from the German, here and elsewhere, are mine.)

Beyond the assertion of Windisch, which stresses the **general**

significance of Curtius' work for the history of linguistics, I intend to show the uniqueness and the effectiveness of his contribution to both classical philology and linguistic science.

Curtius received his academic training at two universities. At Bonn his teachers included Friedrich Ritschl (classical philologist), Christian Lassen (linguist), and August Wilhelm Schlegel (poet, literary critic, and founder of Old Indic philology). At Berlin he attended lectures by Karl Lachmann (Germanist), August Boeckh (classical philologist), Leopold von Ranke (historian), and Franz Bopp, the first professor of comparative studies.

He shared this type of training with many contemporary scholars who, at the end of their training in both classical philology and linguistic science, joined the ranks of one discipline without showing any trace of continuing interest in the other.

Not so with Georg Curtius. His academic course was set for life by the time he left Berlin in 1842 for Dresden where he taught Latin and Greek at a high school for 21 hours a week. In spite of this heavy teaching schedule he found the time to do research. Of the three scholarly articles then prepared I would like to mention here only one: "Die Sprachvergleichung in ihrem Verhältnis zur klassischen Philologie."

In this article Curtius displays his strategy which was to determine not only the general attitude but also the specific course of action for his entire professional career.

Taking his lead from the strong conviction that "the future of the two sciences [classical philology and linguistic science] is dependent upon their genuine and vigorous interrelation" (26), he states his objective as trying "to prove the great importance of historical comparative studies for classical philology" (V) and sets out to do so "partly by giving a brief account of the methods employed, partly by a concise listing of some of the major results achieved by this science" (V).

The relationship cannot and should not be one-sided; it has to be mutual, for "through the industrious efforts of centuries so much detailed preparatory work has been done [by classical philology] in the old languages [Greek and Latin] that here comparative grammar has been handed a rich inheritance for unrestricted use" (26). But the gain is not only a material advantage. It also touches upon a variety of other substantive areas:

> Comparative grammar cannot dissociate itself from philology. ... If the science of language comparison spurns the precision of philological research, if it does not utilize the material offered, and does not learn from philology the sharp and impartial criticism, it will not be able to avoid being led astray and arriving at false assertions. (25-26)

Curtius cites many instances of indifference on the part of classical philology toward comparative linguistics. Frequently, he says, the concerns of the latter are considered by the former as purely marginal, not touching upon the inner core of philology. Hence, "the great quantity of grammars which is published

each year hardly shows any trace of influence by comparative linguistics" (4). The results which the new science procures, he says, "are certainly important enough to make them indispensable" to the classical philologists (9).

Adequate language comparison is bound to furnish insights, e. g., into the specific features of the languages compared. Curtius cites ample examples from various sections of both phonology and grammar. Concerning the formation of tempora and modi in Latin and Greek he asserts, e. g., that these two languages show a most essential difference "which could not have been identified without the help of the comparison" (46).

Stressing and utilizing the far-reaching interrelationship of the two sciences in methods as well as in objectives must not be construed to mean that their merger is depicted as being possible or even desirable. They must not be mixed: "The grammars of the old languages must not be collections of comparative studies. The results of that science should be used for the benefit of the grammars of the individual languages" (51).

But better understanding of, and more extensive familiarity with, the research procedures practiced in both disciplines would undoubtedly lead to a state where

> the still frequently experienced prejudice of the philologists against comparative grammar will totally disappear and the time will come when there will be only one treatment of the old languages, namely a treatment based on comparative studies. (55)

Curtius does not stop at supplying guidelines as to how the classical philologist and the comparative linguist should cooperate so as to maximally benefit from each other. While he continues throughout his life to discuss the theoretical aspects of this cooperation, he also provides, from the very beginning of his professional career, strong leadership in demonstrating that and how these guidelines can be effectively implemented.

Such implementation was clearly envisioned as early as 1845, at the time when Curtius taught Greek and Latin in high school. Already then he wrote that he was confident the time would soon arrive when the results of comparative linguistics would make possible, even imperative, a truly goal-oriented application to the teaching of Latin and Greek (cf. Curtius 1848:55).

Curtius left his high school position in Dresden in 1845 to obtain his **venia legendi** (habilitation) in classical philology at the University of Berlin. He subsequently held lectures, mainly on grammatical and literary topics of Greek. During his stay in Berlin he also published his first major study, the first volume of the **Sprachvergleichende Beiträge zur griechischen und lateinischen Grammatik**, illustrating his strong belief "that only through the closest relationship between historical language comparison and the specific grammar of the individual languages a comprehensive and satisfactory insight into the structure of the particular language can be gained" (VII).

After only four years Curtius left Berlin for Prague in 1849.

It was there that he found the most ideal conditions for converting his theories into most meaningful practice. The situation in Prague specifically, in Austria in general, called for an improvement in the teaching of classical languages in high schools. So far the absence of suitable grammars seemed to make the desired improvement extremely difficult, if not impossible. A suitable grammar in the understanding of Curtius would entail not only making full use of the progress in scientific inquiry achieved by both classical philology and by comparative linguistics, but also utilizing adequate pedagogical principles in preparing the language materials.

Curtius brought about a highly satisfactory solution for the Greek language in 1852 with the appearance of the first edition of his **Griechische Schulgrammatica**. The book was an immediate, and long-lasting, success, spreading first of all from Bohemia to Austria and then from there to the greater part of Germany. Within a short span of 20 years the book saw nine editions. In the first six, a total of 52,000 copies were printed, and another 33,000 with the last three editions. At least eleven translations into other European languages were published (cf. Clemm 1872:46).

The author did not leave it to chance whether or not his colleagues who were to use the grammar in their schools would understand the principles upon which it had been founded. Therefore, he started writing explanatory notes almost immediately after the appearance of the book. They first were published in 1856 as articles and finally in 1863 in book form.

Curtius returned to Germany in 1854. Before he finally settled in Leipzig in 1862, he taught for eight years at the University of Kiel. His major study during that period proved to be the most important research project of his life, the two volumes of his **Grundzüge der griechischen Etymologie.**

A major portion of the work had already been done at Prague, as it took almost 10 years of his spare time until the first volume could appear in 1858 (cf. Lange 1860:103).

Although Curtius could, and actually did, rely heavily on both the general framework and some specific methods readied in the work of Franz Bopp and August Friedrich Pott, the objectives which he set out to pursue still made his project a truly monumental task. What he intended to achieve comes across in his own formulation as something modest in scope and seemingly easy to accomplish, namely "to record the safe results of comparative linguistics for Greek etymology, separate from flighty conjectures or outright false attempts" (V).

He does not only present his findings. In an introductory part of roughly 100 pages he comprehensively explains his methods and shows how they evolved by providing a survey of etymological research from the time of ancient Greece to the present. The survey is primarily intended to convince the reader that there is no generally accepted etymological methodology. Hence, Curtius is confronted with establishing the necessity of his own procedure on the basis of both what the long line of his predecessors had accomplished and what was immediately made available through the current state of historical linguistic research.

No other work of Curtius has played a more significant role in his lifelong struggle for close collaboration between scholars of classical philology and comparative linguistics. For those of his colleagues specializing in classical philology who had read his **Grundzüge** thoroughly it became increasingly difficult to keep aloof from what comparative linguistics had to offer. If in nothing else, the author undoubtedly succeeded in demonstrating that an essential expansion in a core section of the old science was now made possible through outside help, so to say; an expansion far superior - as the historical survey had plausibly shown - to what the ceaseless efforts of many centuries in this regard had been able to produce.

Etymological research was crucially improved by a systematic exploration of all available related forms of each Greek word in other Indo-European languages. But beyond that, the two areas where Curtius substantially outdistanced his many predecessors and most of his contemporaries were those concerned with the regularity of phonetic change and with the principle of analogy.

In both instances his position deserves a high degree of recognition and praise, even though it was precisely because of those two items that his views were vigorously and somewhat relentlessly attacked by the Neogrammarians - many of whom, as we have seen, were his former students - during the last ten years of his life.

Observing the existence of regularity features in sound transitions when investigating the historical development of any given language is tied to the emergence of linguistic science. Franz Bopp employed the term **Lautgesetz** (= sound law) as early as the mid-20s of the last century (cf. Jankowsky 1972:50), and likewise did Jacob Grimm, starting with the second edition of his **Deutsche Grammatik** of 1822. A. F. Pott, the foremost **general** etymologist of the 19th century, who published his first major etymological study in 1833, twenty-five years before Curtius' **Grundzüge**, made ample use of the notion of regular sound correspondences among different languages and between preceding stages of one particular language. But in the case of all those scholars mentioned, the sound law principle had of necessity a limited range of application. Throughout the first half of the 19th century, not even the slightest basis was detected in the observable facts for even the mere idea of the exceptionless operation of the sound law. That many linguists, in view of the enviable position of the natural scientists, are very likely to have revelled in wishful thinking, is an altogether different matter.

Things had changed greatly in the ensuing decades, largely through the surprising discoveries of further areas of regularity, discoveries notably by Carl Lottner (1862), Hermann Grassmann (1863), and Karl Verner (1877). Those findings made it possible to believe that establishing proof for the exceptionless operation of the sound laws was just a matter of how intensely and how consistently the "search-and-destroy" campaign against the few still existing irregularities would be conducted.

Curtius initially was in a position entirely different from that of the Neogrammarians. By the middle of the century the re-

search data in many different languages had vastly increased. So had the number and the quality of the rules, principles, and guidelines. With their help, the accumulated data could now be examined much more thoroughly than ever before. But Curtius, nevertheless, could not have held views different from those of the named predecessors in matters of whether or not the sound laws operate without exception.

To fault Curtius for his views as expressed in the 1850s, which the Neogrammarians have repeatedly done, is unjustified, and that for two reasons. We have hinted at the first already: the evidence of the data at that time squarely contradicted the possible assumption of exceptionless sound laws. The second reason - and a much more important one - is that Curtius went with great ingenuity to the very limit of what his data would permit. Rather than leaving room for arbitrariness as to when and where within a given set of phenomena regularity or irregularity would prevail, he set up two classes of language phenomena. For the members of one class all changes proceed with regularity. For the members of the second class changes occur irregularly until proven otherwise. From today's point of view, which can certainly be said to be more detached - and hence more objective - than that of the Neogrammarians, the cogent conclusion would have to be that Curtius made the very best out of a given situation. Our evaluation would have to be somewhat revised if we shift the attention from 1858 to 1885. At that time the evidence of the available language data had become markedly different.

Already Curtius dealt with the principle of analogical change as being closely related to language changes governed by sound laws, even though he was far from espousing the position of the Neogrammarians that changes not covered by a sound law fall within the domain of the principle of analogy.

Here again it must be stated that Curtius went strictly by the evidence of his language data. Because of his determination to adhere to this evidence alone, he could achieve, on the one hand, a remarkable advance over the position of his predecessors in that he probed the much larger corpus of data with much greater thoroughness and consistency. But on the other hand, he was barred by his own choosing from reaching the extreme position of the Neogrammarians. His main reasons were that he was troubled by the thought that analogy, by definition a language change occurring singularly, lacked the status of necessity and hence was difficult to define scientifically: it CAN occur, but it NEED NOT occur, which simply entails that what has been labeled as an analogy could also be a plain irregularity.

Curtius was all for an increase of systematism in the description and explanation of historical language phenomena. But he was extremely wary of bringing it about at the expense of the true nature of language. Hence his aversion to embrace "neat" formulas like "Language changes not governed by exceptionless sound laws are due to the force of analogy". I doubt very much that in practical matters of research results and their reliability he lagged significantly behind the Neogrammarians because of his unwillingness to subscribe to their rigorous battle cry. In-

stead, I believe that the difference in soundness and effectiveness between the subscriber and the non-subscriber is largely identical to the consequences facing the modern adherer to the "buy now - pay later" slogan as opposed to the adherer of the more old-fashioned practice of "get the cash first - buy later". For the responsible individual the outcome must not be different. The analogy may seem out of place, but in one respect it fits precisely: Curtius knew by the mid-80s that the regularity in language transition had edged closer to an exceptionless state, but he also knew that there was no way of establishing an incontestable scientific proof. He therefore stuck to his position of admitting both regular and irregular changes. The Neogrammarians did not differ in their basic assumptions from those embraced by Curtius: they knew likewise that the exceptionless operation of the sound laws could not be proven either inductively or deductively (cf. Delbrück 1880:115 and Curtius 1885:12). They nevertheless advanced to their rigorous position in the hope of thereby stimulating maximally the search for sound laws hitherto undiscovered.

It is worth noting that Curtius made the distinction between regular and irregular or sporadic sound representation the criterion for dividing his material dealt with in the **Grundzüge**. In the first volume he treats etymologies involving regular sound changes only, while the second volume is dedicated exclusively to the treatment of etymologies with irregular sound transitions.

He himself regards the grouping as a necessary step "to contain arbitrariness" (**Grundzüge** VII), and even the Neogrammarians evaluate that classification quite positively. Thus Berthold Delbrück comments: "An interesting and commendable listing of such irregular sound representations for which the causes are not known has been provided by Curtius in **Grundzüge** .... (Delbrück 1880:115).

The space allotted to the etymologies of the first kind is, apart from the 100-page introduction, almost 300 pages (pp. 99-371), whereas the irregular sound representations, the exclusive contents of the second volume of 1862, cover slightly more than 300 pages.

In later editions, the material kept growing until the two volumes of the fifth edition of 1879, "revised with the help of Ernst Windisch", reached a total of 858 pages, including more than 100 pages of indices.

One may raise questions as to the appropriateness of the ordering principle which Curtius uses. Is it wise to present the approximately 619 items of the first volume in 19 sections according to the sounds rather than according to the roots? The author obviously follows the strategy of bringing it home to the reader that all etymological research is to a very large extent dependent upon our familiarity with sound transition rules. Eventually the ordering principle would have to be the words or roots involved. Although he is aware of it, he follows the strategy that seems to be the most effective at the given time. Finding the location where a particular word occurs is made easy through the indices.

Curtius is acutely aware of how important it is to place highest demands on the reliability of language data. This is well illustrated by his cautioning attitude toward Sanskrit. Far from being infatuated with the language of the Holy Vedas, he warns against overrating the evidence which Sanskrit can provide. He focuses on two problem areas. First, it has to be determined which of the Sanskrit sounds or sound combinations are more recent developments, specific to Sanskrit and not shared by the earlier proto-language. Second, in many instances the meanings of Sanskrit words are difficult to ascertain due to the lack of availability of reliable dictionaries. The implication is, again, that while the individual philologies depend upon the findings of comparative linguistics, comparative linguistics in its turn depends heavily upon the availability of secure data made accessible through research work in the individual philologies.

As a classical philologist at heart, Curtius must eventually get away from minute language data and focus on the meaning component of language. What else could the ultimate objective of historical language study be but the attempt to gain insight into the development of the human mind inasmuch as it is reflected in the vehicle of language? All through his professional career he broaches the subject from various angles in most of his writings. In the introductory part of his **Grundzüge** two sections are devoted directly to the discussion of meaning phenomena. Several others of the total of 16 sections do so indirectly.

He first elaborates on word meaning as the second criterion for determining the genealogical relationship of two words from two different languages. Identity or similarity of sounds in itself is inconclusive. Hence, a precise determination of word meanings is as essential for producing valid etymologies as the availability of reliable tables of sound correspondences. One could even go a step further and say that reliable sound correspondences presuppose the correctness of the word meanings used.

Analogous to the regular change of sounds, the changes of meaning must occur in a non-arbitrary pattern. To find such a pattern would obviously be the primary objective of a new scientific discipline, the "Bedeutungslehre", defined as the scientific approach to determine word meanings and how they change.

Curtius is not prepared, as he was in the case of etymology, to provide a tentative methodology of his own, this time for the investigation of the word meanings with which he has to deal. His prudent hesitation is the logical response to having fully comprehended the enormous obstacles on the way toward a satisfactory treatment of the subject matter. But the fact remains that he clearly identified, as early as 1858, and tagged for future action a crucially important area of linguistic research.

The investigation of the meaning component, "the most intellectual part of language", would undoubtedly result in "gaining access to a recognition of the intellectual life, characteristic of a particular nation, in a specially illustrative way". Embarking on such a task, however, would require that first the solid foundation be created for a comprehensive and exhaustive treatment of meaning changes. It would entail identification of the root

words ("Stammwörter") of each individual language, a procedure which is only possible through historical language comparison (Curtius 1858:75).

For the moment he resigns himself to inaction, since "there is, therefore, hardly anything else to do but, for the time being, to collect and arrange for each individual language the pertinent data in the most appropriate manner and then leave it to the future to supply a science of meaning ("Bedeutungslehre") for both the Indo-European language family and the individual languages" (ibid.).

In conjunction with the question of meaning it is worthwhile mentioning Curtius' position in matters of language decay. In one respect he follows the general attitude exhibited by most linguists of the time. It involves the view that all language changes lead to a deterioration of form. Unlike August Schleicher, for instance, for whom the entire historical period of language is a history of the form decay and who used the search for sound laws to reach through to that original and perfect state of language which is not yet marred by decay, i. e., "free of sound laws", Curtius, in accordance with views expressed by Wilhelm von Humboldt, directs our attention to the increase of intellectual demands placed on the speaker. External decay is paralleled by internal growth:

> It is exactly this the great and attractive feature in the history of language that the external decay gives birth to new life, that the intellect uses the weakening of the material side for its own purposes and only then unfolds its wings most freely when the sound contents of the words have dissipated into a finer texture. ... Only then is the cosmos of language comprehensively presented, if language is traced from its first foundations to those periods where it becomes the organ of the consciously creative intellectual power of man. (Curtius 1862a:23)

It cannot be the purpose of this brief paper to present a **comprehensive** appraisal of Curtius' overall achievements, in theory and practice, for the strengthening of both classical philology and the new science of linguistics. Only a selected number of items could be discussed, and even that had to be done in an exemplary way.

Accordingly, the ensuing summary statement of what the name Curtius stands for in the history of linguistics is of necessity a rather incomplete listing of his numerous accomplishments. But it should nevertheless fulfill its intended purpose to prevent us from losing sight of one of the most influential linguistic scholars of the 19th century:

1. It is no exaggeration to claim that it was Curtius who established Greek studies as a truly scientific discipline. He outlined the framework and produced much more than a mere token implementation.
2. His **Grundzüge der griechischen Etymologie**, hailed at the time by friends and foes alike as "one of the most valuable and

most useful books of linguistics in general" (cf. Windisch 1886), had a profound influence on the scholars of both classical philology and historical linguistics, since it incontestably proved how much common ground there was between the two sciences and how profitable it was for them to share their resources and pool their skills.

3. Starting at a time when secure pertinent data were still scarce and when it was far from being fashionable, Curtius forcefully pleaded and worked for reducing the amount of irregularity observed in historical language data. He expanded the range as well as the intensity of the research effort and stimulated the awareness of its inescapable necessity.
4. He stood for continuity of the scholarly endeavor. Mastering the state of the art as he had inherited it from his predecessors, he moved on, in many respects far beyond his models, in such a way that the gain of attaining a greater command of details was never achieved at the expense of curtailing the overview of language as a human institution.
5. Curtius wrote for his fellow scientists, and he served them well. But at the same time he did not neglect the more practical aspects of the work of the classical language teachers in high schools. In the greater part of his writings he took into account that the study of language entails a scientific as well as a pedagogical dimension. With singular success he strove to make the latest results of academical research immediately accessible to the respective teaching profession.
6. Curtius was an extremely popular and effective university teacher. He fascinated both by what he said and by how he said it. The large number of his students, many of them from foreign countries, virtually assured him a widespread circulation of his views. It is doubtful whether any German linguist wielded a stronger influence on university students and a wider public of direct or only marginal concern with language studies.
7. Being a master in two fields of specialization, classical philology and comparative linguistics, he recognized the strengths of both, but also their weaknesses. In the ceaseless effort of a lifetime he managed to impress upon a majority of scholars from both disciplines that the coordination of their research would not weaken any of their strengths, but could strengthen, if not eradicate, most of their weaknesses.
8. More than any of the linguists in the second half of the 19th century Curtius propagated from early on, with the help of his uncommon pedagogical and organizational skill, what he was convinced to be the ultimate goal of the historical science of language: serving the study of man: "The objective of philology in its highest sense is only one, to learn what man is by learning what he has been" (Curtius 1886, I:31).

Especially linguists of today can ill afford to be indifferent to the many ideas in the work of Georg Curtius that have successfully withstood the ardent test of time.

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THE NEW CONCEPTS INTRODUCED BY THE GRAMMARIAN PHILOSOPHERS

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My subject is the influence of the "grammarian philosophers" on the development of Grammar. I will be talking about French grammar, and eventually about Spanish grammarians. This is not the first time the influence of philosophy on the development of grammar has been discussed. Guy Harnois published in 1928 an essay on the Théories du langage en France de 1660 à 1821 in which he described the impact of the grammatical theories of Port-Royal on the transformation of grammar.

The idea of a "grammarian philosopher" is peculiar to the XVIIIth century. Nobody thinks of Aristotle as a "grammarian philosopher", even though his definitions of noun, verb and sentence were so common among grammarians for many centuries. The name "grammarian philosopher" has been reserved for those philosophers of the eighteenth century who referred to grammar as part of their ideology. The two most outstanding grammarian philosophers were Etienne Bennot de Condillac and Louis Claude Destutt de Tracy.

Let me start then with Condillac. He was born in Grenoble, in 1714, was educated in the Great Seminary of Saint-Sulpice in Paris; in 1740 he took holy orders; he participated in the philosophical debates as the founder and main proponent of sensationism, the theory that maintains that experience consists exclusively of sensations. He died in 1780 when he was working on his last essay, La langue des calculs published in 1798.

In his first two essays, Sur l'origine des connoissances humaines (1746), and Traité des systèmes (1749), he contrasted the cartesian philosophy and the ideas of Locke. His emphasis was on the language of action as the natural expression of ideas. In 1754 he wrote Traité des sensations in which he displayed his understanding of the world as a combination of signs inside an imaginary statue. In 1758 he was offered the opportunity to put his ideas into practice in the education of Prince Ferdinand of Parma. For this noble purpose he wrote Cours d'études in which he defined language as a way of breaking down ideas, and he explained this process as consisting of observing one after the other our sensations. Grammar was defined in this text as "the principles and rules for this analysis" (Cours d'études: II, ch. 6).

It is important to remember that the contemporaries of Condillac were "encyclopédistes", such as Denis Diderot (1713-1784); philosophers such as J.-J. Rousseau (1712-1778) and Voltaire (1694-1778), and scientists such as Linnaeus (1707-1778) who established by the second half of the century his system of botanical classification. Condillac never had for his contemporaries the respect he had for the teachers of Port-Royal, Arnauld, Nicole and Lancelot, whose Grammaire générale et raisonnée (1660) was edited by Duclos in 1756. He wrote that they were "the first to bring the light" (Cours: II, Intr.).

The French grammarians who were best known by the time of Condillac were Cesar Chesnau du Marsais who wrote Des Tropes (1730) and Principes de Grammaire (1769); l'abbé Girard, author of Les vrais principes de la langue française (1747), and Nicolas Beauzée with his Grammaire générale (1767). Condillac took some of his grammatical ideas from these sources. One example is the concept of "construction" taken from du Marsais's article in L'Encyclopédie des Sciences.

It was also the time when the Royal Academy of Spanish Language published the first Castillian grammar (1771) written and sponsored by the Academy. The same year, Daniel Fenning published in England A New Grammar of the English Language described as an "easy introduction to the art of speaking and writing English with propriety and correctness."

Condillac has been regarded as a "grammairien empiriste," in contrast with Beauzée, described as "grammairien rationaliste." Sylvain Auroux has outlined in what sense Condillac may be seen as an empiricist. In the first place, he was a "geneticist" who accepted that the origin of language is in the hands of the Creator of man. Second, he described analogy as the way languages develop. Third, he advanced the concept of language as representing the instrument for the analysis of our ideas. So, geneticism, use of analogy and instrumentalism are the subjects in which Condillac appears as an empiricist in the study of language.

In the aspect of empiricism, the most important topic of Condillac's philosophy is the theory of language as a system in which all the elements support each other. In general, the consistency of a system is the effect of general principles, or abstract axioms, accepted as self evident. The more simple are the principles, the better consistency the system has. Condillac discusses three types of principles. In the first group are general maxims, or axioms, which are totally clear and reliable. The mind asserts them as the foundation of reasoning. In the second group are the suppositions or hypotheses created in order to explain a fact. Finally, the third group is a combination of both kinds of principles (Traité de systèmes: ch. 1).

The evident objective of the Traité des systèmes was the criticism of Descartes's theory of "clear ideas," Malebranche's theory of "pre-established harmony" between sensations and objects, Leibniz's theory of "monads", and Spinoza's ethics. The effect of this criticism was corrosive. Le Comte Baguenault de Puchesse says that the "use of systems almost disappeared" (Condillac, p. 47). Condillac was regarded as the most courageous enemy of the "esprit de système." However, in the penultimate ch. of the Traité he described a new kind of system, based on the organization of nature, developped by analogy, and summarized in the art of talking or discourse. To talk, to write, to judge or to argue in some way "grow in us without our direct participation" (Traité: 17; Cours: II, 2).

The concept of reasoning as "a well constructed language" was based on the idea of language seen as a system of knowledge in which the components support each other and are produced by just one principle. All the sciences would be more precise if only they were written in the most simple language (Logique: 7).

There was a possibility of a conflict between the concept of a system and the character of signs described as "arbitrary" at least in the first stage of development. Condillac corrected the term "arbitrary" and substituted "artificial." A word is "an artificial sign of our ideas" (Cours I: 1-1). Condillac gave priority to the language of action as the natural expression of ideas because of the influence of l'abbé de l'Epée, the author of a methodology for the training of deaf-and-dumb children. The idea was to create a universal sign language. On the other hand, the definition of words as "artificial signs" was only the translation of the definition "signus ex institutio" (Sanctius, Minerva, n° 1). As a matter of fact, Condillac says that there are three kinds of signs: "natural", "accidental" and "signes d'institution" (Traité: I, 2-4).

It is evident that the idea of language as a system is an outcome of different opinions. Kant also regarded language as "the tool of thought" (I. F. Knight: 55). But it was Condillac who "organized the discrete data of experience into meaningful systems" (Knight: 56). However, since he was regarded as opposed to all kinds of systems, in the Dictionnaire des synonymes, a book he wrote for Prince Ferdinand of Parma, Condillac justified his attitude by saying that he opposed only systems based on wrong assumptions. He explained this idea in a letter to Gabriel Cramer (Sept. 24, 1749).

As for Destutt de Tracy (1754-1836) he also recognizes that grammar is just the continuation of the study of ideas. Grammar in fact is part of his Eléments d'idéologie (1803). He says that "he was astonished by the fact that everything

in language is linked together, and the mechanism of language becomes one at the same time that it is completed" (ch. IV, n° 3).

This initiative of the grammarian philosophers in studying language as a system of artificial signs has been followed by eminent linguists. Ferdinand de Saussure's classical definition of grammar is based on the idea of language as a system (Cours de linguistique générale: II, 7-1). In the Set of Postulates for the Science of Language, delivered by L. Bloomfield in Chicago at the 1925 Annual Meeting of the Linguistic Society, he accepted the method of postulates, assumptions or axioms. He said that it can be useful for the study of language, because "it forces us to state explicitly whatever we assume, to define our terms, and to decide what things may exist independently and what things are independent" (Language: 1926, 2, 153-54).

In the Spanish language, the Grammar published by the Academy in 1771 accepted that the practices of the language are based on general principles. Andrés Bello (1781-1865) defined language as "an artificial system of signs." He based on this definition the claim that every language has to have a different grammar. He said that the aim of his research on language was to look for the general principles on which the explanation of the use of words and constructions are based. Nevertheless, Bello rejected any "abstract ideology" as the foundation of grammatical rules. He took from the grammarian philosophers the concept of language as a system, and the use of general principles as a base for linguistic analysis. The grammar he created is a systematic analysis of words and constructions, based on the use of the language from the point of view of logic and consistency.

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IV

PHONETICS, PHONOLOGY, ORTHOGRAPHY

SYLLABLE DIVISIONS BASED ON RELATIVE HOLD DURATION DURING BOUNDARY AND STRESS PRODUCTION[1]

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1. INTRODUCTION

In the last decade phonologists have taken the concept of the syllable from a marginal, almost non-existent unit to one of the basic frameworks for the application of phonological rules (compare Chomsky and Halle, 1968 and Kahn, 1976, 1980; Clements and Keyser, 1983; Harris, 1983; Halle and Vergnaud, 1980 etc.). This development has come not because of some new phonetic definition concerning the syllable's nature or its boundaries: on the contrary, linguistic views of phonological syllable "types" or "structures" have generally been derived from distributions of abstract phoneme segments so that "phonological syllables" and their boundaries need not correspond to any observable "phonetic syllables" (esp. Pike, 1967; Basbøll, 1981 and Fudge, 1969 among others). Nevertheless, even if "there is no agreed phonetic definition of a syllable" (Ladefoged, 1982: 219), many authors admit that basic evidence for the existence of syllables rests in the constraints and habits of speech production. In any event, structuralist approaches and some of the more recent work providing impetus to generative syllable phonologies (esp. Kahn, 1976, 1980) have used low-level phonetic phenomena as evidence in categorizing syllable-types -- which are represented in all cases as various groupings of phoneme segments.

In this perspective, we would like to report on the results of a series of instrumental observations which point to some basic inadequacies in the typology of distributional phonological syllables. Using minimal syllable-juncture pairs such as free Danny - freed Anny and comparing with intraword contexts, relative hold duration was found to be a primary parameter of stop syllable-timing differences in the production domain. This variable provides a reliable means for identifying syllable types for intervocalic stops in various word boundary and stress conditions. Consequently our presentation addresses two corollary issues with regards to syllable typologies: that is, the problem of juncture, and the long-standing difficulty of defining parameters for syllable division.

2. THE PROBLEM OF JUNCTURE AND SYLLABLE TYPES

Juncture provides an interesting basis for opposing three perspectives on syllable structure which can be grouped under the headings of linear segmental theories, non-segmental "views", and non-linear segmental models. In earlier work (reviewed by Lehiste, 1960) "internal open juncture" vs "closed juncture", as defined by Trager and Bloch (1941: 225), was most often described by setting

up segmental juncture phonemes at various morphological boundary points. According to these studies, juncture phonemes are part of a linear segmental transcription: that is, since speech was viewed as a phoneme-by-phoneme program, juncture was taken to be a unit in itself (e.g. /#/ or /+/), occurring between or "outside" of intact feature-bundles. These abstract juncture units could be realized by pause allophones or phonetically different segments before or after the juncture but within words it was claimed that only zero allophones occurred (cf. esp. Leopold, 1948; other references in Lehiste, 1960: 6-9; see also Fischer-Jørgensen, 1975: 61).

Proponents of the linear-segmental approach never really took juncture much beyond the debate of whether or not it was emic. However, during the course of this debate, some authors were taking the problem a step further to ask whether or not juncture was segmental to begin with. In this line of reasoning, Haugen (1949) was among the first to define juncture as a "morphologically determined displacement of syllable-timing". Lehiste's notion of "bounded sequences" (1960: 45-49; see also 1962) gives a similar non-segmental account of English juncture. Interestingly, Lehiste claimed -- as did Saussure and Stetson before her -- that linear-segmental transcriptions of variants associated with syllable-size units were "misrepresentations" (1960: 46 -- compare Saussure, 1978: 85-86 and Stetson, 1951: 72 and addenda; for other non-segmental perspectives see Firth, 1972 and Griffen, 1981).

Another approach, suggested by generative syllable phonologies, provides perhaps the most complete attempt to deal with juncture. Essentially, in the generative non-linear proposals, syllabation rules assign boundaries to word inputs (specified in terms of stress) before the application of segmental phonological rules. A syllable "tier" thus eliminates any further reference to morphological boundaries (#, +) and consequently offers greater economy in the formulation of rules. In the majority of these proposals, syllable types are hypothesized from distributions of abstract segmental phonemes. However, in Kahn's ground-breaking thesis (1976, 1980), phonetic evidence taken from slow speech is used to substantiate the various phonological syllable types. To deal with juncture Kahn reintroduces the notion of ambisyllabicity which is in a sense the movement of a syllable boundary away from its hypothesized between-segment position under certain conditions specified in terms of stress and word boundary: in actual slowed speech, ambisyllabicity would apply to VstopV for instance when a syllable-like break seems to occur during the hold closure phase (cf. Kahn, 1980: 97; Fujimura and Loving, 1978: 114 and footnote 16). Thus, if we take the sequence ($V_1C\ V_2$) within words and at word boundaries, the author suggests the following rules (Kahn, 1980: 97-100):

1. WITHIN WORDS

(According to the "Medial Ambisyllabication Rule" - MA)
A) C syllabifies with V_2 when V_2 is stressed

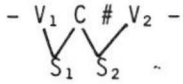
$$- V_1\ C\ V_2 -$$
$$\quad\ |\ \ \vee$$
$$\quad S_1\ \ S_2$$

B) C is ambisyllabic when V_1 is stressed

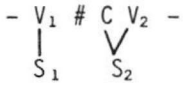
2. AT WORD BOUNDARIES

(According to the "Transword·Boundary Ambisyllabication rule" - TWA)

A) when initial vowel follows word boundary, C is ambisyllabic



B) when initial consonant follows word boundary, C is linked with V_2



This non-linear segmental approach has obvious advantages over linear proposals; for example, in the case of non-homophonous juncture pairs such as a # name -- an # aim, an optional[2] TWA rule would predict two different syllable structures.

It is worth emphasizing that Kahn's approach distinguishes itself from other syllable phonologies in that syllable structures are not derived from the application of distributional criteria but from observations of syllabation in slowed speech. The author recognized that the major difficulty faced by any syllabation scheme is the problem of establishing syllable divisions of intervocalic consonants and consonant clusters -- and on this point distributional criteria are particularly weak: single consonants for example are often found in both prepausal and postpausal position so that assigning medial consonants to one or the other surrounding vowel nucleus is essentially artibrary (cf. Pulgram, 1961, 1970; Haugen, 1956; O'Connor and Trim, 1953; Halle and Vergnaud, 1980; Delattre, 1966 etc.). However, attempting to solve this problem using slow speech syllabation may prove just as arbitrary. In fact, our own observations (based on 16 subjects reading contexts while following a metronome set at 108 beats per minute[3]) suggest that the possible break points for VstopV do not invariably agree with Kahn's rules. The most notable exception applies to ambisyllabic divisions: in our samples, speakers often produced these type of divisions regardless of word boundary or stress placement.

Perhaps a slower rhythm (< 108 syll./min.) could have confirmed Kahn's observations but since break delays before closure or after release are relatively rare in normal speech we were led to suppose that, with a normal tempo, hold closure itself might be affected by relative syllable-timing differences. We were aware that a

number of variables had been proposed as possible parameters of syllable divisions and in contrasting the literature on this the following variables were retained in our essentially exploratory study:

1. V_1 duration in $V_1C\ V_2$ (e.g. Maddieson, 1984).
2. Duration of hold closure = timing of release (Raphael and Dorman, 1980; Picket and Decker, 1960 etc.).
3. Duration of C (esp. Christie, 1977).
4. Amplitude of release (Davidsen-Nielsen, 1974; see also Henderson and Repp, 1982).
5. Duration of release (Davidsen-Nielsen, 1974).
6. Presence of pause (Christie, 1974, 1977; see also references in Section 2).
7. V_2 F_0 transition (Lehiste, 1960).

We hypothesized that, for minimal syllable juncture distinctions such as hurried Anny -- hurry Danny, speakers produce significantly different values for some of the variables above, and if these syllable distinctions are independently controlled then stress would not affect the differences in values. Having isolated the syllable-distinguishing variables in this way we further supposed that some of these variables could provide parameters for identifying the syllable division of word-internal consonants independently of stress position. For instance: if values produced for a word medial sequence $V_1C\ V_2$ were significantly different from the values for $V_1\#C\ V_2$ but not significantly different from those for $V_1C\#V_2$ -- or the reverse -- then the variable could function as a syllable dividing parameter.

3. METHOD AND RESULTS[4]

The temporal variables listed above were defined in both proportional and absolute terms and care was taken to relativize scores on an independent basis to avoid complementary covariations; durations of release however had to be expressed as complementary values of hold closure duration: since the duration of C was defined as the sum of the duration of hold closure + release, any significant variation in one variable necessarily implies significant variations in the other. Also, F_0 transition was defined as a proportional change between the frequency of the initial half and that of the final half of V_2; as for the amplitude or release, this was expressed as a proportional difference between release and V_2 peak amplitudes.

The $V_1C\ V_2$ contexts used provided for three sets of comparisons (compare with the utterances in TABLE 1):

A) BOUNDARY 1 ($V_1\#C\ V_2$ vs $V_1C\#V_2$ minimal pairs)
   X STRESS (V_1 vs V_2 vs $V_1 + V_2$).
B) BOUNDARY 2 ($V_1\#C\ V_2$ vs word-medial $V_1C\ V_2$)
   X STRESS (V_1 vs V_2).
C) BOUNDARY 3 ($V_1C\#V_2$ vs word-medial $V_1C\ V_2$)
   X STRESS (V_1 vs V_2).

TABLE 1 - Syllable contexts $V_1C\ V_2$ used in comparisons

C	STRESS CONDITION	BOUNDARY CONDITIONS	
		INTERWORD ($V_1\#C\ V_2$ vs $V_1C\#V_2$)	INTRAWORD ($V_1C\ V_2$)
[d]	$V_1 + V_2$	1. we freed Anny 2. we free Danny	
	V_2	3. we hurried Anny 4. we hurry Danny	A. redact ($V_1C\ V_2$) B. redecorate[5]
	V_1	5. we freed a niece 6. we free Denise	C. freedom ($V_1C\ V_2$) D. redecoration[5]
[t]	$V_1 + V_2$	7. they suit Eddy 8. they sue Teddy	
	V_2	9. the statute ends 10. the statue tends	E. mutation (V_1C) F. pretending (CV_2)
	V_1	11. heat reverses 12. he traverses[5]	G. pretense (V_1C) H. citrus (CV_2)

16 native English subjects were asked to read without hesitation the contexts of TABLE 1, which were interspersed in a list of 100 utterances to prevent exaggerated pronunciation of minimal pairs. Recordings of the reading sessions were analysed using a Digital Sona-Graph (TM).

The results of analysis of variance for repeated measures (and non-parametric tests for variable 7) showed that, excluding pause, only two of the variables function as syllable division parameters independent of stress conditions: A) relative hold closure time (defined as duration hold / total duration of C) and B) relative amplitude of release. Relative hold duration was retained as the primary parameter of syllable divisions in VstopV for the following reasons:

1) The general applicability of relative amplitude of release as a parameter of syllable division for VstopV proved to be limited to voiceless stops (cf. Davidsen-Nielsen, 1974).

2) Syllable divisions using pauses are limited to interword contexts where they occur optionally at no greater than chance probability.

Summarizing the results for $V_1t\ V_2$ and $V_1d\ V_2$ contexts, syllable-timing differences of relative hold closure times point to the following correspondences between syllable types; these are independent of stress (see the mean values of TABLE 2 and the F-ratios of TABLE 3):

- For intervocalic [d]: relative hold durations produced for word-medial $V_1d\ V_2$ are not significantly different from those produced for the interword syllable structure $V_1\#d\ V_2$

but are significantly different from those produced for the $V_1d\#V_2$ structure.

- For intervocalic [t]: relative hold durations produced for word-medial $V_1t\ V_2$ are not significantly different from those produced for the interword syllable structure $V_1t\#V_2$ but are significantly different from those produced for the $V_1\#t\ V_2$ structure.[6]

TABLE 2 - Mean "relative hold times" for $V_1d\ V_2$ (n = 14) and $V_1t\ V_2$ (n = 13) sequences in various boundary and stress conditions.[7]

C	STRESS	BOUNDARY $V_1\#C\ V_2$	$V_1C\#V_2$	$V_1C\ V_2$
		$\bar{X}$ (s)	$\bar{X}$ (s)	$\bar{X}$ (s)
[d]	V_1	.78 (.07)	.61 (.17)	.75 (.16)
	V_2	.82 (.08)	.56 (.19)	.81 (.08)
[t]	V_1	.43 (.06)	.50 (.17)	.53 (.09)
	V_2	.56 (.07)	.63 (.14)	.61 (.09)

TABLE 3 - Summary of F-ratios for separate analysis of variance performed in three boundary comparisons of $V_1t\ V_2$ and $V_1d\ V_2$ sequences.

SOURCE	C	BOUNDARY 1 ($V_1\#C\ V_2$ vs $V_1C\#V_2$) X STRESS (V_1 vs V_2 vs $V_1 + V_2$)	BOUNDARY 2 ($V_1\#C\ V_2$ vs $V_1C\ V_2$) X STRESS (V_1 vs V_2)	BOUNDARY 3 ($V_1C\#V_2$ vs $V_1C\ V_2$) X STRESS (V_1 vs V_2)
BOUNDARY	[d]	51.328***	.124	24.279***
	[t]	6.552*	15.445**	1.049
STRESS	[d]	.147	2.323	.001
	[t]	6.429***	45.248***	5.829*
BOUNDARY X STRESS	[d]	1.147	.007	3.454
	[t]	.046	2.925	.042

* $p < .05$ ** $p < .01$ *** $p < .001$

4. CONCLUSION: SOME IMPLICATIONS OF PHONETICALLY DEFINED SYLLABLE-TIMING STRUCTURES FOR VstopV

1. The syllable is not an "intuitive given" or a unit having no phonetic properties as some have claimed (contra, Lisker, 1978).

2. Syllable divisions are not processed after or before intact phoneme-size units so that, whether we consider the syllable phonologically or phonetically, segmental representations such as /V-CV/ or /VC-V/ are -- as Saussure and Stetson had warned -- misrepresentations both of the timing program and the speech event itself.

3. In unhesitated English speech, syllable divisions for VstopV occur during the hold phase and this implies that for these sequences all syllables are "ambisyllabic" -- consequently the term "ambisyllabicity" does not in itself characterize syllable structure differences.

4. Axiomatic distributional criteria or syllabation in slow speech does not provide adequate grounds for uncovering the syllable structures in the production of intervocalic stops.

5. Syllable division parameters cannot be applied indiscriminately to general categories such as "consonant" and "vowel". In fact, characteristics of voicing for example can modify the syllable-timing structure of VstopV.

6. Syllable-timing distinctions of hold closure are not produced by differences in absolute duration but by differences in relative duration. It can be presumed then that speakers are referring to a time-base which could be given by the rhythmic structure of the utterance context (cf. Summerfield, 1975) or by neurological rhythmic properties (Lenneberg, 1967; cf. also Lehiste, 1970).

Concerning this last point, it seems that the relative syllable timing of so-called phoneme segments suggests a new direction in the search for phonetic invariance: if relative values of some syllabation parameters prove to be "generally" invariant, the replacement of the concepts of static segmental phoneme and feature bundle by some sort of dynamic syllable bundle would be supported. In any event, it is already clear that it is unreasonable to reject the validity of time-based syllabic units on the grounds that their boundaries do not coincide with those of static phoneme segments or phonological syllables (cf. Lisker, 1978; Benguerel and Cowan, 1974; Öhman, 1966: Su et al., 1975).

NOTES

1. I am indebted to Professor K. McCalla of Laval University for his valuable suggestions and criticisms regarding earlier drafts of this paper. Errors of form or interpretation are strictly my own.

2. "Any... ambisyllabicity producing rule would have to be optional, since it is always possible to hesitate between words" (Ibid.: 99).

3. The fastest tempo possible for a sequence of repeated [tə] is approximately 8 syllables per second (Lehiste, 1970: 7).

4. Details in Boucher, forthcoming.

5. Although "secondary stress" was used for V_1 in these V_1 C V_2 contexts, comparisons of V_1 durations and relative amplitudes indicate that most of these units were at least as stressed as other identical V_1 contexts having "primary stress".

6. It should be noted that relative amplitudes of release for V_1 t V_2 and relative hold closure durations point to the same type of correspondence between V_1 t # V_2 and word-medial V_1 t V_2.

7. These results were checked in post hoc multiple comparisons using Bonferroni t-tests - see Boucher, forthcoming.

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OBSERVATION OF A SOUND CHANGE IN PROGRESS

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In this paper I wish to make some general comments on two general principles of historical linguistics that usually receive common and uncritical assent, but that in practice are treated rather differently. The first of these, well known at least since Paul (1920), is the principle that one cannot observe a sound change in progress. One can observe the state of a language before a change and the state of the language after a change, thereby inferring the occurrence of that change. But one cannot observe the change itself while it is occurring. This principle is widely agreed to in both theory and practice. But I will describe here a case, admittedly unusual, in which a change can, in fact, be seen in progress. The somewhat strange circumstances of this change will remind us of the second principle, articulated most clearly by Dyen (1963, 1969), that one must not assume for any protolanguage a degree of uniformity greater than that observed in existing languages. This principle, too, receives uniform assent in theory, but it is widely ignored in practice. Historical linguists normally act as if the protolanguages they posit had been fully uniform. Any data not fitting tractably into their uniformity assumptions require them constantly to rearrange and revise their often differing protolanguage models in an attempt to achieve that uniformity which, in theory at least, they admit to be unattainable, even unrealistic. Dyen's principle usually refers to the dialectal and idiolectal variations observed in any natural language. What we will see here is that the variation one observes in this example is unpredictable, that is, even retrospectively unpredictable, and unpredictability can have painful consequences in historical linguistics. This example will require us to extend Dyen's observations to deal with regularity and uniformity of changes as well as languages.

My example is drawn from Kenya Luo (Dholuo), a West Nilotic language with approximately 2,000,000 speakers in central and south Nyanza Province of Kenya. Luo has a consonant system with five positions of articulation for stops (bilabial, interdental, alveolar, palatal, and velar), but only three for fricatives (labio-dental, alveolar, and glottal). There is opposition of voice among the stops, but none among the fricatives, voiceless f, s, and h being the only ones that occur. I am here avoiding the traditional phonetic and phonemic notations so that I will not suggest any premature judgments concerning the phonemic status of these sounds. Fricatives in general are of rather limited occurrence in the language, and there is some doubt as to whether Proto-West-Nilotic had and fricatives at all. But s is at present well established in Dholuo, occurring in a variety of environments in a good number of words. The h is of more limited occurrence, appearing in only slightly more than 120 lexical items. In about 65% of these it is in word-initial position. The f is even more restricted, occurring in perhaps half a hundred words. It, too, is in word-initial position in about 65% of these. Furthermore, and critical to

the arguments to be developed below, in all but about a dozen words it occurs before u or w. (I will assume here that u and w are distinct phonemes in Dholuo. It is by no means certain that they are, but the present discussion will not be affected by the answer given to that question.) Of these dozen, all but four (and three of them related) are clearly loans, mostly from Arabic through Kiswahili. Let me quickly note here that we do not have a clear and obvious case of complementary distribution with another phone. The h would be the only candidate for complementary distribution with the f, but it, too, occurs before u or w in two or three dozen words. There is, however, some tendency toward complementarity, which it would be worthwhile to explore.

The only apparently native Dholuo words with f before anything other than u and w are the verbs fito and fiko, both meaning 'sniff,' the related afika 'sniffing, snuff,' and the verb firo 'nurse, tend.' It turns out that, whether accidentally or systematically, there are no occurrences of h before the sequences ir, ik, and it. The occurrences of f before u and w prove even more interesting. There is no case in the language of the existence of a lexical item containing one of these sequences and the existence of a fully distinct lexical item containing h in exactly the same environment as the f. That is, there are no f/h minimal pairs with different meanings. It is necessary to add the meaning qualifier because there are slightly more than a dozen words that may be pronounced with either an f or an h. These are regarded by native speakers as different ways of saying the same word. A speaker may, however, if he wishes, read into the difference of sound a slight semantic difference. Words with f may connote greater intensity or more vigorous physical action than the corresponding words with h. For example, the verb for 'to fly' will most commonly appear as huyo when predicated of ndege 'airplane,' but it will most commonly appear as fuyo when predicated of winjo 'bird.' This distinction, however, is somewhat forced; and either variant could, if desired, be used either way. There is also a fair amount of individual and dialectal variation concerning which variant is preferred for any given word.

The question to be addressed, then, is whether f and h are to be considered distinctive in Kenya Luo. One can, if one pushes hard enough, claim complementarity in their distribution, excepting only those few cases in which there is some sort of free variation, which, however, is not entirely free. One must additionally deal with the fact that loan words containing f or h are brought into the language and are not subject to variation in pronunciation. Further, native speakers recognize a difference between f and h, this recognition being reflected in the orthography. If f and h are allophones, theirs is the only non-distinctive difference reflected in writing. To resolve this question it is necessary to apply in a careful, even mechanical way a fully articulated set of principles governing the determination of phonemic status. The obvious candidate, most clearly stated and most widely accepted (even, unconsciously, by those who have not studied it in its original form) is the set provided by Trubetzkoy in the Grundzüge der Phonologie and the Introduction to the Principles of Phonological Descriptions. At the outset of the Grundzüge Trubetzkoy sets out his rules for the determination of

phonemic status. The first three of these rules will concern us here (Baltaxe trans.):

> Rule 1: Two sounds of a given language are merely optional phonetic variants of a single phoneme if they occur in exactly the same environment and are interchangeable without a change in the lexical meaning of the word (in der intellektuellen Wortbedeutung).
>
> . . .
>
> Rule 2: If two sounds occur in exactly the same position and cannot be interchanged without a change in the meaning of the words or without rendering the word unrecognizable (unkenntlich), the two sounds are phonetic realizations of two different phonemes.
>
> . . .
>
> Rule 3: If two sounds of a given language, related acoustically or articulatorily, never occur in the same environment, they are to be considered combinatory variants of the same phoneme.

Rule 3 obviously covers complementary distribution, of which we are considering here a partial case. If the residual cases can be handled under Rule 1, we will conclude unambiguously that f and h are allophones of a single phoneme. These residual cases, of course, are the occurrences of f or h before u or w. These must be divided into two classes. First are those in which both f and h can occur as variant pronunciations of the same word. For these words, Rule 1 comes very close to being satisfied. There is, as noted above, a shade of difference in the connotations of these different pronunciations, and one must ask whether these constitute a difference in the intellektuelle Wortbedeutung. In the section of his book on Phonologie und Lautstilistik (pp. 17-29; 14-25 in Baltaxe), Trubetzkoy distinguishes three different semantic functions that language can serve. The Kundgabefunktion (Baltaxe: function of manifestation) provides information about the speaker and the speaker's attitudes, the Appellfunktion (Baltaxe: function of appeal) serves to evoke a certain kind of response from the hearer and provides information about the relationship between the speaker and hearer, while the Darstellungsfunktion (Baltaxe: representative function) provides direct information about the subject matter. It is only this last function which is concerned with the Intellektuelle Wortbedeutung, and so we must ask which of these functions is served by the f/h difference in the words in question. Trubetzkoy gives some additional help toward making this decision in the Introduction, where, in his comments on the equivalent of Rule 1, he says, "According to their indicative functions, facultative variants are either truly facultative or stylistically irrelevant, in that they signify nothing at all, or else stylistically relevant (or more simply, stylistic) in that, when they are of a general sort, they express some particular emotional shade or nuance and, when they are individual, they indicate or suggest the social station, age, sex or some other quality of the speaker." I would suggest that the greater intensity implied by the f, while it may come close to the Darstellungsfunktion, has not yet reached

it. It is too variably and inconsistently used to serve in that way and is too dependent on the speaker's mood of the moment. Indeed, it seems perfectly to fit Trubetzkoy's definition of stylistic variation. Rather, the difference between f and h should be interpreted as serving the Kundgabefunktion, manifesting the mood of the speaker, and therefore not effecting any change in the intellektuelle Wortbedeutung. Rule 1 is therefore satisfied, and these examples do not prevent us from considering f and h as allophones of a single phoneme.

A problem arises, however, from the fact that not all words containing fu/fw can also be pronounced with hu/hw or vice versa. In these other words the change produces what is definitely and identifiably a non-word of the language. In other words, the change produces a word that is clearly unkenntlich in the sense of Rule 2. For this reason these other words fall not under Rule 1 but under Rule 2, with disastrous consequences. For a part of the lexicon, Rules 1 and 3 apply to cause us to call f and h non-distinctive, allophones of a single phoneme. But for another part of the lexicon Rule 2 applies, causing us to call f and h distinctive, two separate phonemes. From the data alone, we are unable to reach any conclusion concerning the status of these two sounds. At this point, if we are to achieve any progress, we must cease to be mere linguists and look at the relevant cultural and historical data for guidance. When we do so, we rather quickly find the source of our difficulties.

Until the present generation it was the custom among the Luo to remove six front permanent teeth. The origin of this custom is unclear and the subject of much speculation. One suggestion worth mentioning is that it arose as a precaution that would allow people to be fed if they contracted tetanus, prevalent in that area. Whatever the source of the practice, however, it is manifestly difficult to maintain a comfortable distinction between f and h if one's front teeth are missing. It was not until the present generation that the custom, known as nago, was abandoned, and it is precisely in the present generation that one sees, first of all, the emergence of differentiated f and h, and, second and concomitantly, the uncertainty as to their phonemic status. The conclusion that forces itself upon one is that as a consequence of a physiologic change resulting from cultural change, we are in the privileged position of witnessing in this phonologic uncertainty the birth of a new phonemic opposition. These two sounds are becoming phonemically distinct, but are not yet so. In other words, we are observing here a sound change in progress. The situation is admittedly an unusual one, and the more valuable in that it allows us to redefine the notion "change in progress." In this example we have a good deal of uncertainty among native speakers concerning which form they should use in any given instance. Such uncertainty is by no means unusual. But what we also have is a clear indication of the direction in which this uncertainty is tending. This situation is unusual, and it is precisely this indication that allows us to know that there is a phonemic change in progress. From this base we can now reinterpret the conventional wisdom that one cannot observe a sound change in progress. Now we can say more precisely that we may often see sound change in progress in the

uncertainty and variation of native speakers, but it is most unusual for us to be able to know what it is we are seeing, that it is, indeed, change in progress. Surely not all variability and uncertainty results in structural change.

There is a final point to make concerning this variation and uncertainty. Some years back Dyen (1963, 1969) pointed out that the assumption of uniformity in a reconstructed proto-language, which useful in the early stages of reconstruction, was ultimately invalid. One may not assume for a reconstructed language a greater degree of uniformity than is to be found in presently existing natural languages. This point has usually been taken to refer to the high degree of dialectal and idiolectal variation observed in all languages. But the data I have presented here invite us to extend the generalization even further and say that it is unsafe to require regularity and uniformity of development in hypothesized language changes greater than which can actually be observed happening or having happened. It would be useful here for us to project ourselves ahead a century or so, at which time we may presume that the phonemic opposition between f and h will be fully developed, and see what conclusions would be reached then about a "Proto-Luo" of the 1980's. One could, presumably, reconstruct words like fuyo and huyo and note their semantic similarity. But there would be no way to posit an orginial f/h phoneme and then state in general and regular terms the conditions under which it would have split into two phonemes f and h. Our available methodology simply would not be able to define the terms of the split with the traditionally desirable regularity. The true course of events could be represented only by positing not just a non-uniform, but an UNPREDICTABLY non-uniform development. Allowing unpredictability into our methodology is, very naturally, anathema to most linguists. Indeed, to most of us, the whole notion of method and methodology simply excludes unpredictability a priori. But the fact of the matter is that the development of this split in Dholuo is proceeding unpredictably. Individual speakers are making their own separate and not always consistent choices about which available form to use in any given situation. The predictability we crave simply is not there.

Now although this situation in Dholuo is unusual, it appears that what is most unusual about it is its visibility. The variation forces itself on us. It cannot be ignored. But there is no reason to think that this case is unique. I suspect that other similar cases could be found, especially, perhaps, in syntax, if one would care to look for them in these terms. Consonant systems are normally quite tractable, and it is striking to find such irregularity here. But other systems are a different matter, and I would suggest that it might well be profitable to seek out such examples. But it is sobering to think how phenomena such as this would affect our methodology. Once imprecision and unpredictability are allowed in at any point, it becomes a tremendously difficult task to keep them from expanding their range so much that little or no predictability is left to us at all.

The conclusion I draw from all this is that there is a high price to be paid for the fascination of watching the birth of a phoneme. The

completely unpredictable irregularity of the process described here will require a reevaluation of our methodology both in reconstruction and in synchronic analysis. It is even possible that this reevaluation may change the way in which we perceive our whole discipline. There has been a steadily increasing tendency to try to ally linguistics more with the natural sciences than with the humanities. It is just possible that the very nature of our data will not at present permit this shift, and that an attempt to press methodology in the wrong direction will obscure rather than clarify the subject of our investigations.

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SEGMENTING THE UNSEGMENTABLE: DYNAMIC ANALYSIS AND SWABIAN ORTHOGRAPHY

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For years, the Linguistic Association of Canada and the United States has offered me a forum for expounding a nonsegmental approach to phonology derived from the findings of dynamic phonetic analysis. Typically, I have taken a problem in phonological analysis and demonstrated that the traditional segmental analyses are insufficient and inaccurate per se or that they miss significant generalizations that would appear, once they are made, to be indispensable to our understanding of the phenomenon. In doing this, I have stressed that dynamic analysis is the analysis of speech itself, while segmental analysis is the analysis of little more than glorified alphabetic orthography. (Compare Griffen 1985.)

This year, however, I should like to take a rather novel tack. In an on-going project on the development of a standard orthography for Swabian, I have found certain phenomena that can be analysed and understood only when we abandon the neat left-to-right segments of traditional segmental phonetic transcription and, as usual, view them within the hierarchies of a system of dynamic coarticulatory constraint. While this may be fine for phonetic and phonological analysis, though, the very practical purpose of the research is the development of an orthography -- precisely that neat left-to-right segmental progression that hides generalizations and hinders analysis. The problem, then, is to take a phenomenon that can be understood only from the viewpoint of dynamic analysis and incorporate it into a segmental orthography in such a way as not to obscure the dynamic relationships.

The Swabian Voiceless Vowel

In a rather lengthy article appearing in Word (Griffen 1983a), a series of phenomena are discussed in the Swabian dialect/language, a division of Common Alemannic spoken in the southwestern Federal Republic of Germany. As in Upper German in general, the consonant subsystem of Swabian is organized along the aspirate fortis-lenis scale -- the progression from lenis media to tenuis to fortis aspirata. The basic problem is the appearance of Anlautsverhärtungen (word-initial strengthening) and Auslautsverhärtungen (word-final strengthening) along the scale in environments that not only would not support such alternations within the phonetic tendencies of an aspirate fortis-lenis scale, but that should actually prohibit such alternations.

The part of the general phenomenon that most concerns us here involves the perfect participle inherited by Swabian from Middle High German (MHG). In MHG, perfectivity was usually shown by the addition of a prefix ge- to the participial form of the verb (although, to be sure,

some verbs were inherently perfective and others could become perfective with other prefixes -- compare Lockwood 1968:100-102). Thus, for example, the MHG verb ruofen 'to call' maintained the perfect participle gerüefet 'called'.

In Swabian, however, the MHG participle gerüefet has come to be widely pronounced as [kriəfd] (compare Kauffmann 1890:199). The suppression of the schwa in such contexts is quite general in Swabian and clearly derives from the weakening of an already weak articulation. The reason for the strengthening of the media to a tenuis (or at least to a reduced fortis -- see below) where the stem begins with any consonant, on the other hand, is not at all clear from the segmental perspective. Indeed, as demonstrated in Griffen 1983a, when we take all the related phenomena and their variations together, we find that from the segmental standpoint, the strengthening could have occurred neither prior to the loss of the vowel nor after it. As a matter of fact, neither the weakly articulated prefix nor the initial position (particularly in a cluster with a liquid) could have supported strengthening, especially at a time when such initial tenues were themselves becoming weakened to mediae.

The only way around the dilemma is to posit a voiceless vowel. On account of the weakening of an already weakly articulated schwa in a prefix, the syllabic vowel became voiceless and shortened to the point that it became totally obstructed by the consonant. Since the principle of dynamic coarticulatory constraint in dynamic analysis holds that the consonant must at all times constrain at least part of the vowel and it has been demonstrated that it can indeed constrain the entire vowel (see Griffen 1983b), the "devoicing" of the consonant (not a strengthening at all -- hence the designation by Kauffmann 1890:199 as a reduced fortis) is achieved through the voiceless vowel in accordance with the principle of directional constraint (see Griffen 1985:chapters 3 and 4). Actually, such a phenomenon should not be all that surprising and can be illustrated by pronouncing the English word begin, gradually weakening the articulation of the e to schwa. The weakening eventually leads to shortening, and at some point the speaker notes that he or she is pronouncing [pg̶i̶n] (although some segmentalists might claim this combination to be impossible). This exercise provides insights into how the historical development occurred and also how the principles of dynamic analysis accurately reflect the speech event.

A further progression of the phenomenon in Swabian involves verbs with initial mediae, in which the entire prefix is "lost" and the initial media of the stem "strengthens" to the homorganic (reduced) tenuis. For example, Dreher (1919:67) notes that the infinitive [g̥ə̥] (< MHG gëben) 'to give' is realized as the participle [k̥ə̥] (< MHG gegëben) 'given'. Moreover, the MHG participle gebachen 'baked' has become [paxə] in Swabian (Dreher, ibid.). The dynamic underpinnings of this change can readily be understood if we start with the pronunciation [pg̶i̶n] achieved in the previous paragraph, and continue the weakening process -- eventually we end up with [k̶i̶n]. What happened in the Swabian participle and in the heuristic exercise as well is the loss of the initial tenuis due to excessively weak articulation and competition with the totally obstructive stem-initial, leading to the shift of the stem-initial obstruction to the real word-initial position constraining the voiceless vowel.

From the dynamic perspective, then, the voiceless vowel is still present in one form or another. Either it maintains its historical but extremely short position in the syllabic/vocalic division of the syllabic frame or it has become a degree of aspiration (of "absence of voicing") as an obstruction prosody in the obstruction division. As the phonetic effects would be identical in either case, the difference is moot and, from the standpoint of the features involved, insignificant. In either case, though, it is still there, though it is visible only from the perspective of dynamic analysis.

From Dynamic Analysis to Orthography

At this point, the problem for the development of an orthography for Swabian should be rather obvious. As the participial prefix is no longer visible from a segmental perspective, how can it be represented in a segmental orthography? Certainly, it should be represented, for the marking of the perfect participle is far more significant in Swabian than it is in Middle and Low German dialect/languages, for it is the only way of denoting not only perfective aspect, but also past action.

Departures from phonetic representation in this matter of marking the participle are common in the individual orthographies of Swabian authors. For example, one of the leading poets and scholars of Swabian, Vogt (1979:80, 187) advocates maintaining the symbol for the media before the glottal fricative -- writing bhalda 'held' (< MHG behalten) where one would be tempted to write phalda from the sound alone. In differentiating between [kommə] 'to come' (< MHG kommen) and [kommə] 'come' (< MHG gekommen) and other such problems, however, less guidance is provided, as the problems of contextual variation turn out to be more opaque.

Adding to the problems of contextual variation are the problems of dialect variation. The proposed orthography must be standard -- acceptable to as wide a spread of dialects as possible, such that a writer in Kempten might write a sentence in Allgäu Swabian that can be read by a reader in Stuttgart, as though it had been written by a Stuttgarter. In order to illustrate the dialect variation, I shall briefly review the development of three words from MHG -- gerüefet 'called', kraft 'power', and gras 'grass'.

First of all, in many -- if not most -- dialects we find the most innocuous case, in which the (reduced, voiceless) tenuis is heard only where the participle is employed. Thus, the example words might be rendered as kriefd, grafd, and gras (compare Bohnenberger 1928:27, Haag 1898:32-33, Moser 1936:65-66). These represent the tendency in Swabian to reduce tenues to mediae across the board, which has lead to the loss of contrast between tenuis and media in the labial and dental positions of obstruction and in the velar position in clusters. For such dialects, the tenuis itself could suffice as a mark of perfectivity.

However, there has been a tendency among some western Swabian dialects to generalize not the media, but the tenuis in clusters that would mimic the traditional shift to tenuis in the participial prefix (the classic voiceless vowel realization). Thus, the example words might be rendered as kriefd, krafd, and kras (compare Kauffmann 1890:199). These dialects provide a strong reason for marking, since the added forms in-

crease opportunities for ambiguity.

Added to these problems is the very opposite tendency in many other Swabian dialects to shift the participial tenuis to a media. Thus, the example words might be rendered as griefd, grafd, and gras (compare Stengel 1877:393). To confuse matters more, this is also one of the most common representations of the participle in literature, even when it is written in dialects maintaining the participial tenuis, probably on account of the inheritance from MHG and the influence of New High German. For example, while the linguist Heissel (1935) notes the use of the participial tenuis at least before a stem beginning with the glottal fricative (the most compelling and thus most widespread environment for the phenomenon) in the region around Sigmaringen, the poet Gern, born in the region in 1907 and contemporary with Heissel, writes the participial prefix as g- even before the glottal fricative in, for example, the word ghenkt (< MHG gehenkt) 'hung' (Gern 1981:66).

Finally, the most obvious solution is also clouded with problems. Were we simply to maintain the MHG ge- prefix and let each dialect pronounce it in its own peculiar way, then there would be no way of differentiating between these participles and the nouns and adjectives that were lexicalized before the change. For example, MHG gelogen 'lied' has become Swabian [klo̯ge], while MHG glücke 'luck' has become Swabian [glik] and MHG geluste 'desire', in which the ge- is not participial but lexical and hence not as weakly articulated, has become [glʊ̈sdə] (Dreher 1919:17; compare Griffen 1983a:166).

Of course, one could reserve the tenuis as the mark of the perfect participle alone, with each dialect making its appropriate adjustments either to the participle or to the other forms. Even this apparently simple and direct solution falls apart, though, for three reasons. First, the greater phenomenon actually involves similar Anlautsverhärtungen in the labial and dental positions of articulation as well (with the MHG prefix be- and with the feminine and plural definite article from MHG diu). Second, such a solution would fail to account for the participial forms of [baxə] ([paxə]) and [kommə] ([kommə]). And third, the marking would fail to maintain the grammatical nature of the prefix (as called for by Vogt), and would run into problems where the stem does not begin with a consonant and the devoicing does not occur.

This leaves us with the need to mark the participle as a participle and conflicting practices among dialects that militate against any such standard marking. What makes matters worse is the fact that the phenomenon itself is tied up with a totally obstructed vowel that finds no place in the conventional marking systems of alphabetic orthography, since it has no place in the left-to-right sequence. Nonetheless, it is there in one form or another, and its presence in many -- if not most -- dialects signals the participle in one way or another; but unfortunately neither form nor way is segmentably representable.

In past presentations before the Linguistic Association of Canada and the United States, this would have been an excellent place to stop. Once more, segmentation fails, be it in phonetic or phonological analysis or in alphabetic representation. The purpose of this project, however, is to use the results of dynamic phonetic analysis in order to help people write better; and since these people are rather accustomed to alphabetic writing (which is, after all, a very efficient method), some solution

should be sought.

The Apostrophe

The solution to this problem involves the one symbol of the alphabet that signals not a sound segment, but the absence of one; and this symbol may thus be considered a nonsegmental alphabetic device. The apostrophe is generally used in orthographies to take the place of a letter or letters that have for one reason or another been removed. Indeed, in German the name for this device is the rather more descriptive Auslassungszeichen. Nonetheless, it is used regularly in English and much less extensively in New High German to differentiate between the [s] sound at the end of a word denoting possession (and in New High German possession by some proper names) and all other [s] sounds -- a grammatical use with neither phonetic value nor even phonetic or historical justification.

In this solution, the apostrophe itself would take on the function of the participial marker, for the dorsal obstruction is not always present. When the dorsal obstruction is present, the apostrophe can follow it in the traditional designation for the "loss" of the e from the MHG prefix ge-. With the understanding that all other alphabetic representations are tentative (as the standard orthography is still under construction), we can write the perfect participle of ruofa 'to call' as g'riefd. No matter what the pronunciation in any particular dialect (or even idiolect), this designation serves to mark the initial obstruction as a prefix, to be pronounced in whatever way the dialect pronounces that prefix. Usually, of course, the voiceless vowel will in one way or another cause the tenuis pronunciation of the obstruction, and the apostrophe may thus be viewed as some form of Verhärtungszeichen (following the traditional interpretation of An- and Auslautsverhärtungen mentioned above).

Of course, in those dialects that change all mediae in such clusters to tenues, the apostrophe simply acts as the grammatical marker, as it does for the genitive in English and New High German. Likewise, in those dialects that change all initials to the media, the apostrophe serves the same grammatical function. In both sets of dialects, then, and in all other variants, the grammatical function of the apostrophe will be useful in writing, whether or not it reflects a phonetic distinction.

It is in the case of the stem-initial mediae, however, that the apostrophe most clearly stands as the sole perfectivity marker. For example, the perfect participle of bacha 'to bake' would be written as 'bacha. Just as above, the apostrophe is useful in imparting the grammatical information, regardless of the pronunciation. Nevertheless, in the majority of dialects in which the stem-initial media is pronounced as a tenuis, it is the Verhärtungszeichen aspect of the apostrophe that signals the mutation.

Of course, in the case of a stem-initial dorsal tenuis, the apostrophe would serve to provide more grammatical information than is conveyed in speech. Thus, the perfect participle of komma 'to come' would be written as 'komma, though both would be pronounced the same in all dialects. Once again, this is reminiscent of the use of the apostrophe in English or New High German possession.

Insofar as the few cases of stems without initial consonants are

concerned, the apostrophe would cause no problems so long as the readers and writers apply a simple phonic rule by which the apostrophe loses its effect as a Verhärtungszeichen before a vowel. Thus, the participle of ęssa 'to eat' would be rendered as g'ęssa [gęsə] (compare Kauffmann 1890:196), and the reader would just recognize that the vocalic environment blocks the hardening (in reality, the devoicing). As this mimics a general tendency in the language anyway, it would not be at all unusual.

Conclusion

The apostrophe can thus be used not to designate a vowel that has been removed, but rather to designate a vowel that has either become totally obstructed or that has evolved into an obstruction prosody. In either case, the vowel or its descendant is segmentally invisible, but dynamically present. Indeed, whether one views the finished orthography segmentally or dynamically, the apostrophe serves its purpose by denoting simultaneously a segmentally "missing letter" (though related phenomena will still appear problematic to the analyst) as well as a dynamically coarticulated feature.

Neither interpretation is indeed without its precedents in Swabian literature. The use of the apostrophe between the g and the participial form of the stem is rather widespread among Swabian authors. Where the entire prefix has turned up "missing" with consequent Anlautsverhärtungen, however, writers have generally been at a loss to represent the phenomenon. Thus, for example, in an exchange between a Swabian and a German-speaking judge, a character in a play by Beuchle (1982:23) first uses the participle kleppert 'trampled' and then Germanizes this form to gekleppert for the judge (who, of course, still cannot understand the word, which does not exist in New High German).

On the other hand, there is in fact precedent for the use of the apostrophe to represent dynamically coarticulated features. Much as does French, Swabian maintains a subsystem of nasal vowels, derived historically from the vowel-plus-nasal combination, in which the nasal shifted to a syllable prosody and disappeared entirely as an "independent" consonant. Thus, its development parallels that of the voiceless vowel in its becoming totally coarticulated.

To represent these nasal vowels, Vogt advocates the use of the apostrophe to stand for the "missing" nasal consonant. Thus, Vogt writes schee' for [ʃe:] 'beautiful' (1979:38). While I would prefer to represent the nasal vowels in the same way as does French (simply by writing the historical nasal letter in an appropriate environment and leaving the rest to articulation), the use of the apostrophe for the nasal would certainly indicate an acceptance by Swabian readers and writers of the dynamic use of the device. This acceptance is particularly valuable in the use of the apostrophe in the case of the stem-initial mediae or the velar tenuis, in which the same tactic must be employed as that of the nasal vowel -- the coarticulation of the feature designated by the symbol with the adjoining letter.

The use of the apostrophe in this rather complicated task of marking the perfect participial prefix in a standard Swabian orthography would thus appear feasible not only from the analyst's perspective, but also from that of the reader and writer, who must after all be satisfied

with the analyst's work, if that work is to be accepted and implemented. And it must be noted in closing that the solution is attainable only through the use of dynamic phonetic analysis, for in traditional segmental analysis the problem and its solution are both quite invisible.

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V

MORPHOLOGY AND SYNTAX

ALLATIVES AND ELLIPTICAL GOAL LOCATIVES: A PROCEDURAL DECODING MODEL AND A COMPATIBLE STRATIFICATIONAL TREATMENT

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0. Introduction

Consider the phrase to the right in (1). The discourse segment in (1) can be paraphrased as (2). What is explicit in the first sentence of (1) and both sentences of (2)--of the pyramid--is only implicit in the second sentence of (1). There, the sememes S//def//pyramid// have zero realization. In such a sentence, a phrase like to the right is generally viewed as representing an elliptical (goal) locative.

(1) Put the black cube to the left of the pyramid. Put the clear cylinder to the right.
(2) Put the black cube to the left of the pyramid. Put the clear cylinder to the right of the pyramid.
(3) Move the black cube to the left of the pyramid. Move the clear cylinder to the right.
(4) Move the black cube to the left of the pyramid. Move the clear cylinder to the right of the pyramid.
(5) Move the black cube to the left of the pyramid. Move the clear cylinder right(ward).

Compare this situation with that of (3) and (4). Discourse segment (4) is not a paraphrase of (3). However, (5), containing the allative right(ward), is a close paraphrase. [1] For this reason, to the right in (3) generally is viewed as a periphrastic allative and is not seen to involve ellipsis.

In this paper, I will outline a procedural decoding model of allatives and goal locatives (both elliptical and explicit) of the sort observed in (1) - (5). I will also present a compatible stratificational description, focusing on the relevant semotactics. In the process, I will show that such allatives and elliptical goal locatives differ only slightly, i.e. in terms of their discourse reference.

1. Background

The need for a procedural decoding model of discourses containing segments like (1) - (5) arose during the development of a computer-assisted language learning (CALL) lesson, TERRI (Coleman, in press). TERRI is a simulation designed to give students of English as a Second/Foreign Language practice in using imperatives. The scenario and natural language understanding capability of the simulation represent much simplified adaptations of Winograd (1976). The student views a scene containing several objects.

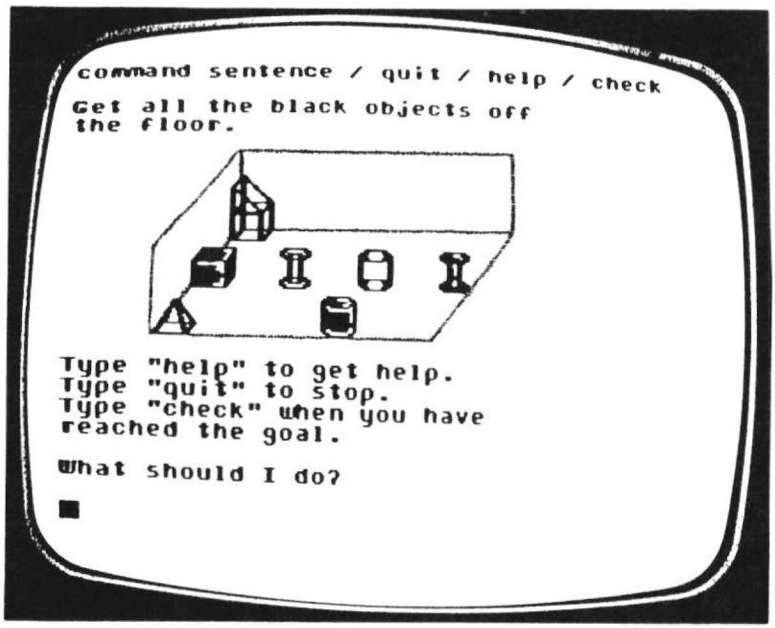


Figure 1. Initial scene from TERRI (Coleman, in press).

See Figure 1, above. The program establishes a goal to be achieved, in terms of object locations (e.g. 'Get all the black objects off the floor'). Via English commands, the student orders TERRI to move individual objects (e.g. 'lay the black cube on top of the clear one'). TERRI decodes each command, checking for errors in structure and vocabulary in the process. When decoding of a command is complete, its pragmatic 'sensibility' is also checked. [2] Commands which are grammatical and 'sensible' are carried out via real-time animation on the computer graphics display. Because TERRI is intended to give students the feeling they are actually using the target language, features like anaphora and ellipsis are critical to the realism of the simulation.

2. The Procedural Decoding Model

TERRI's decoding grammar [3] is a simple ATN grammar (Wanner & Maratsos, 1978). The main procedure begins by identifying the verb head of the imperative clause typed by the student. Then the main procedure simultaneously subcategorizes the verb and invokes a procedure for the appropriate verb subcategory. (E.g., one procedure (*PUT) is invoked to handle put, set, lay, place, and locate, another procedure (*PIC), to handle pick (...) up, lift, grab, raise, and get.) The procedure for a given verb subcategory assigns a semantic value to the verb, then calls several separate

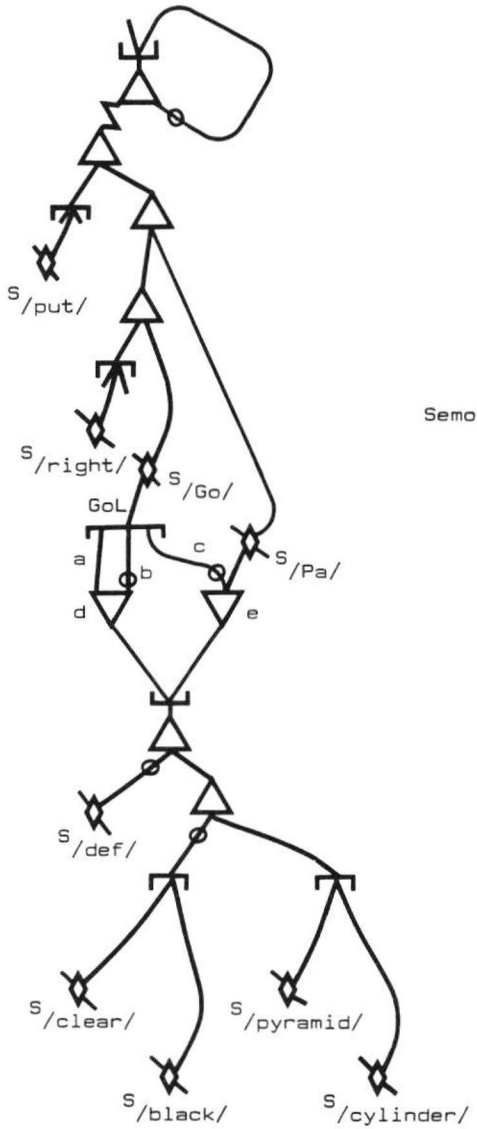


FIGURE 2.
Semotactics of S/put/.

finite state procedures to parse/decode the complements that compose the remainder of the clause; 'sensibility' is checked along the way. On return to the main routine, TERRI updates the graphics display or provides a diagnostic message.

To decode the second sentence of (1)--containing the elliptical goal locative to the right--procedure *PUT would perform several actions:

1. Assign a semantic value to the verb.
2. Call procedure *NP to parse/decode the patient-direct object.
3. Call procedure *AVAIL to check the existence and availability of the patient.
4. Call appropriate preposition-handling procedures to parse/decode the first part of the goal expression. (A phrase like to the right (of) is treated as a compound preposition; this simplifies the grammar significantly in this case.)
5. Since there is no of in the second sentence of (1) (only to the right), procedure *PUT deduces the goal expression to be elliptical; procedure *NP is not called again; instead, the most recent goal locus [4] is extracted from discourse memory. This value is assigned to the current goal locus. Because its antecedent is also a goal locus, I'll refer to this type of (elliptical) goal locus as A-GoL.
6. Procedure *DEST (destination) is called to compute the actual destination, based on the goal locus and the semantic value of the preposition. It also checks on the availability and appropriateness of the destination. (As mentioned above, for example, the destination cannot be on an object lacking a flat top.)

To decode the second sentence of (3)--containing the periphrastic allative to the right--procedure *MOV would perform the same actions, with only one exception. The value of the current goal locus is assigned not from the previous goal locus (the coordinates of the pyramid) but from the coordinates of the current patient (the clear cylinder itself). I'll refer to this type of goal locus as A-Pa because it is coreferential with the patient (Pa) of the same predication. In other words, the second sentence of (3) is decoded as if paraphrasable as (6).

(6) Move the clear cylinder to the right of itself.

3. A Compatible Stratificational Description

Thus far, sentences like (7) and (8) have been considered. In (7), the goal locus [5] is explicit (the pyramid). An explicit goal locus, obviously, is always decoded if available. Thus, in Figure 2 it is the first alternative (line a) under the ordered OR node. The upward ordered AND node d makes the same goal locus available later via line b, in the absence of another explicit

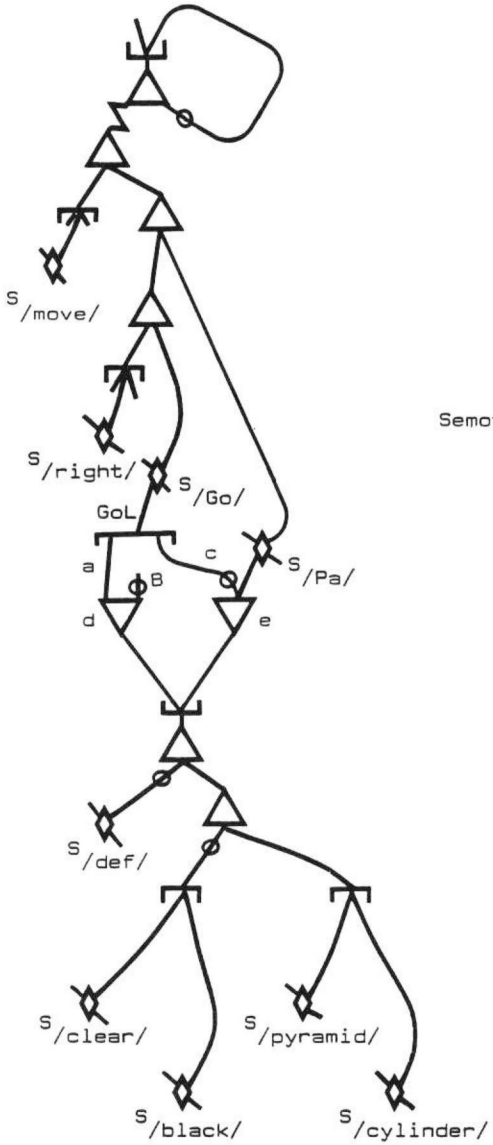


FIGURE 3.
Semotactics of S/move/.

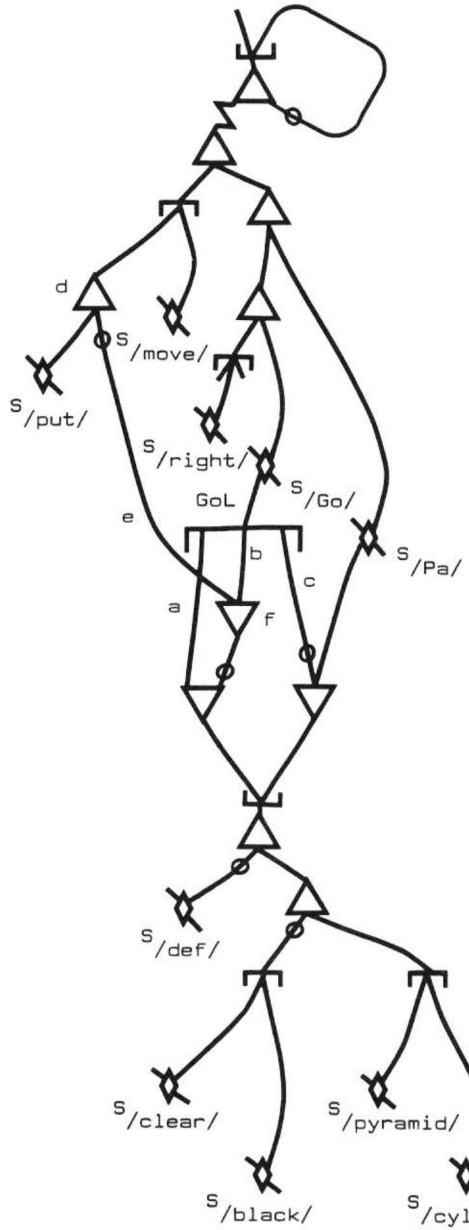


FIGURE 4.
Overall view of GoL.

locus under a. [6] In the second sentence of (1), this is exactly what happens. There is no explicit goal locus in this second sentence, so the goal locus is taken to be the one that was explicit in the first sentence (the pyramid); i.e., it is A-GoL. If the second sentence of (1) occurs without a conditioning context--see (8)--then and only then is it decoded in much the same way as (9): the goal locus is taken to be the patient itself. [7] This is alternative c under the ordered OR node, which represents a goal locus of type A-Pa. The unordered upward AND node e enforces identity between goal locus and patient in this case.

(7) Put the clear cylinder to the right of the pyramid.
(8) Put the clear cylinder to the right.
(9) Move the clear cylinder to the right.

In Figure 3, line c handles the implicit goal locus as in (9), again, the patient itself. Line a in Figure 3 leads downward to an explicit goal locus. The upward AND node d makes this goal locus available in a subsequent predication (realized via an elliptical clause) containing a predicate like S/put/; line B (Figure 3) connects to the lower portion of line b (Figure 2) via a downward OR node (not shown) in that type of predication.

The major difference between S/put/ and S/move/ is the inability of the latter to share a goal locus (alternative b in Figure 2, missing in Figure 3) with a previous predication. [8] Figure 4 combines Figures 2 and 3. Note line e connecting downward AND node d and upward AND f. It shows that in order for alternative b to occur, the predicate must be S/put/. [9] The optionality circle on line e indicates that S/put/ can occur without alternative b.

4. Conclusions

Although only S/put/ and S/move/ are discussed above, the description is generalizable to numerous predicates. With most predicates having a goal expression, the goal locus is decoded as with S/put/. Some of these are realized in SVOA clauses (e.g. S/lay/, S/set/), some, in SVO(A) clauses (e.g. S/take/). (I refer to the typology of English clauses as offered in Quirk et al., 1972.) There are a number of predicates more closely resembling S/move/, e.g. S/slide/ and S/relocate/. [10]

It has been shown that allatives (of the type discussed above) and elliptical goal locatives, generally supposed to be quite different, actually differ only in terms of the antecedents for their respective goal loci. Both involve zero realization of a goal locus. In both cases, the goal locus is explicit elsewhere in the discourse, either in a phrase in a previous clause realizing a goal locus or in the phrase realizing the patient in the same clause.

The similarity between allatives and elliptical goal locatives becomes clear when their description is approached via a procedural decoding model. Stratificational grammar has been shown to be compatible with such a treatment. In addition, the foregoing

demonstrates the ability of SG to deal with a phenomenon like ellipsis in discourse. This is accomplished in a way which does not involve deletion rules but which is compatible with a procedural decoding model that is more likely to be in accord with psychological reality.

NOTES

[1] Allatives with -ward seem to differ semantically from other allatives in English in one important respect. While -ward allatives (e.g. backward) usually specify a directness of path, periphrastic allatives (e.g. to the back) and bare one-morpheme allatives (e.g. back) specify only overall direction. Suppose someone's car is parked at the head of a line of cars, with another car immediately behind it, but with large gaps in the line even farther behind; further suppose that for some reason the person does not want to be at the front of the line. It might make sense to suggest Move you car to the back (of the line) or Move your car back (in line) but not Move your car backward. For the purposes of this study, therefore, I will take L/-ward/ to be the simple realization of SN/direct path/.

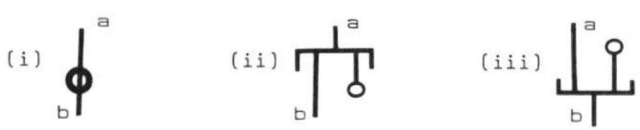
[2] For example, TERRI can decode a reference for the phrase the black wedge. But since there is no black wedge in the scene (there is only a clear one), TERRI will reject any command containing this phrase as nonsensical.

[3] The program has no encoding grammar. If a command is both grammatical and 'sensible', TERRI's only response is 'OK', after which the command is carried out on the display. An ungrammatical/nonsensical command is flagged with one of approximately two dozen diagnostic messages. For example, if the student tells TERRI 'put the black cube on the wedge', the program will respond, 'I can't. It won't balance.' (TERRI's real-world knowledge includes information about the 'stackability' of objects with/without flat tops.)

[4] In TERRI-semantics, the 'goal locus' (GoL) is the set of positional coordinates for the object referenced by the head NP of the goal expression, e.g. for to the left of the pyramid, the coordinates indicating the location of the pyramid.

[5] For the purposes of this stratificational description, 'goal locus' is defined as the semotactic argument(s) of S/Go/ (goal), i.e. the sememe(s) dominated by S/Go/ in the semotactics. See, for example, the substructure labelled 'GoL' in Figure 2.

[6] In all diagrams in this paper, the optionality circle (i) is to be interpreted as (ii) if drawn nearer a downward node, as (iii) if nearer an upward node.



[7] Some speakers judge (8) unacceptable with the interpretation of (9). For these speakers, then, (8) is acceptable only if a previous goal locus is available. These speakers lack alternative c under the ordered OR.

[8] Another difference is the ability of S/move/ to occur without any goal expression, e.g. Move those boxes. Since this feature is not directly relevant to the current analysis, it has been omitted from the diagrams for the sake both of clarity and brevity.

[9] Several other predicates allow this alternative, e.g. S/set/, S/lay/, and S/place/, among others.

The second sentence of (3) does not have the A-GoL interpretation required in the second sentence of (1), if read with unmarked stress. But, under certain conditions of marked stress, S/move/ does allow the A-GoL interpretation; see (10). Interestingly, S/put/ does not require a realization with unmarked stress in the earlier sentence (the one containing the antecedent of the goal locus in the second); S/move/ seems to require marked stress in all the places indicated in (10).

(10) Move the black CUBE to the LEFT of the pyramid. Move the clear CYLINDER to the RIGHT.

Also, parallel use of move in both sentences tends to influence in favor of the A-GoL reading for the second. In sum, features that increase parallelism between the two sentences tend to shift the reading from A-Pa to A-GoL.

Given the limited time allotted to each paper, I have excluded such data from the main body of the text. A discourse segment such as (10) shows that Figure 4 oversimplifies somewhat the upward connections of lines b and c (representing the conditioning environments and indicating the relative markedness of the A-GoL and A-Pa readings, respectively). This does not have direct bearing on the main points of this paper, however.

[10] With a few predicates, notably S/throw/, it is not clear whether an implicit goal locus may be the current patient or the current agent. The repartee in (11) is perfectly plausible, and it suggests the A-Ag reading (current agent as antecedent of the goal locus).

(11) SPEAKER A (Holding a baseball): Throw this baseball to the right.
SPEAKER B (Facing speaker A): OK. Toss it here.

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AM/BEIM PROGRESSIVE CONSTRUCTIONS IN GERMAN

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It is commonly assumed that German does not have a verbal structure that corresponds to the English progressive aspect. Thus Kufner writes "...German has no equivalent to such verb phrases (i.e. the so-called progressive form) and invariably uses a finite verb form instead. For example:

he is going to the movies
er geht ins Kino"[1]

However, even though German has no obligatory morphological category that corresponds to the English aspect, aspectual information can nevertheless be expressed in German, for instance with the help of prefixes, adverbs, or periphrastic constructions, e.g.:[2]

1. Peter arbeitet gerade.
2. Peter arbeitet noch.
3. Peter ist dabei zu arbeiten.
4. Peter ist am Arbeiten.
5. Peter ist beim Arbeiten.

All of these sentences can be translated with 'Peter is working.' though there are slight shifts in emphasis. In 1 and 2, the fact that the action is in progress is expressed by the adverbs gerade 'right now' and noch 'still,' while in 3, duration is expressed by the idiomatic expressions dabei sein plus infinitive clause.

More interesting than sentences like 1, 2 and 3 are the types of structures we encounter in 4 and 5, Peter ist am/beim Arbeiten. To my knowledge, this type of verbal structure has never been analyzed in detail. This neglect can probably be attributed to the fact that these forms are considered an exclusive feature of the spoken language, the so-called Umgangssprache which only recently has become the concern of linguists and grammarians. In the following, I will discuss the syntactic properties of the am/beim progressive constructions and contrast them, where appropriate, with the English progressive. I will also delineate the functional range of these periphrastic constructions.

The German progressive or expanded form has the following structure:[3]

6. sein + $\left\{ \begin{matrix} \text{am} \\ \text{beim} \end{matrix} \right\}$ + Nom (Inf)

Constructions of this type, consisting of a verb, a contracted preposition, and a nominalized infinitive are quite common in German, e.g.:

7.	Er geht zum Schwimmen.	'He goes swimming.'
8.	Sie kommt vom Kirschenessen.	'She's returning from eating cherries.'
9.	Wir freuen uns aufs Segeln.	'We're looking forward to sailing.'

The occurrence of the verb sein 'to be' in the progressive form signals that someone or something is in the state of performing or undergoing an action or an event. The verb is followed by a prepositional phrase composed of the contracted prepositions beim or am and a nominalized infinitive. Beim and am are contractions of the prepositions bei and an with the definitive article in the dative case.[4] Such contractions are obligatory with all nominalized infinitives.

Up to now, progressive constructions with am and beim have been treated as identical, but there are instances where either one or the other has to occur. According to Admoni, prepositions fulfill two functions:[5]

1) They signal the grammatical relationship between two sentence elements of which one depends on the other.
2) They signal the type of relationship and have a certain lexical content.

Some prepositions can be neutral in certain environments, that is, they fulfill 1) above, but have no specific lexical content. An, basically a locative preposition like bei, seems to fit this description in progressive constructions since it does not add any lexical information. Bei, on the other hand, can also have locative connotations in progressive constructions. The difference between am and beim structures is most evident in a question and answer context.

10.	Wo ist Peter?	a. Er ist beim Segeln.
		b. ?Er ist am Segeln.
	'Where's Peter?'	'He's sailing.'
11.	Was macht Peter?	a. Er ist am Segeln.
		b. Er ist beim Segeln.
	'What is Peter doing?'	'He's sailing.'

Beim, but not am, can imply that the subject is not actually participating in the activity described but is just present, for instance as an observer.

12. Er ist am Schwimmen. 'He's swimming.'
13. Er ist beim Schwimmen. 'He's swimming.'
'He's at the place where there is swimming.'

Because of this additional meaning element of beim constructions, beim is not acceptable in sentences in which the nominalized verb denotes an activity that is not easily observable, i.e., where the subject can only be the actor and not an observer of the action.

14. Er hat soviel zu tun, er ist schon den ganzen Nachmittag
am
*beim Herumrennen.
'He has so much to do, he has been running around all afternoon.'

The locative aspect of beim also prevents its co-occurrence with event verbs like ertrinken 'to drown' that describe the transition from one state to another, or with verbs like genießen 'to enjoy' that describe a condition rather than an action.

15. Das Haus ist am / *beim Verfallen. 'The house is crumbling.'
16. Ich bin am / *beim Genießen. 'I am enjoying (myself).'

Contrary to am, though, beim + Nom (Inf) can also co-occur with other verbs besides sein, usually signalling that an action is in progress.

17. Ich überraschte ihn beim Essen. 'I surprised him while he was eating.
18. Ich beobachtete ihn beim Lesen. 'I watched him while he was reading.

After this brief discussion of the syntactic differences between am and beim constructions, let us now look at their syntactic range and compare it to that of the English progressive. Generally, we can say that the range and the flexibility of the English progressive is considerably wider than that of the German. Most importantly, English progressive forms, due to their verbal nature, can be combined with the same set of objects and prepositional phrases as other finite verbs. In German, on the other hand, the nominalized infinitive has to incorporate the object to form a compound. This is only possible with direct objects and only if the resulting compound is acceptable. Thus 19 can be paraphrased by 20, but not 21 by 22.

19. Sie ist dabei, Kirschen zu pflücken. 'She's picking cherries.'
20. Sie ist beim Kirschenpflücken.

21. Er ist dabei, das Wohnzimmer zu durchsuchen. 'He's searching the living room.'
22. *Er ist am Das-Wohnzimmer-Durchsuchen.

Moreover, neither dative objects nor prepositional phrases nor any other kind of modifier except certain adverbs can occur in am/beim constructions.[6] While the following sentences are ungrammatical in German, they are perfectly acceptable in English.

23. *Er ist am Seiner-Mutter-Helfen. 'He's helping his mother.'
24. *Sie ist am In-Der-Bibliothek-Studieren. 'She's studying in the library.'

Thus verbs that require an obligatory object like kaufen 'to buy' can only be used in the progressive if the object can be incorporated into a compound. As can be readily seen, the above constraint places a heavy burden on am/beim progressive constructions in German, limiting their usage severely. This constraint which basically only allows subject-verb structures and excludes most of the more complex clausal constructions from co-occurring with the progressive, may explain why these constructions did not gain more widespread usage in German and why they are limited to the spoken language. The same constraint also accounts for the inability to form the passive, since in a passive clause the object becomes the grammatical subject. There is no corresponding clause in German to the following English sentence:[7]

25. The cherries are being picked by her.

Like English, however, German progressive forms can occur in all the tenses, e.g.:

26. Wird Karin morgen wieder am Arbeiten sein? 'Will Karin be working again tomorrow?'
27. Karin ist am Arbeiten. 'Karin is working.'
28. Karin ist schon wieder am Arbeiten gewesen. 'Karin has been working again.'
29. Karin war am Arbeiten. 'Karin was working.'
30. Karin war am Arbeiten gewesen. 'Karin had been working.'

28 and 30 sound a little strange, probably because the spoken language generally avoids present and past perfect constructions with the verb sein due to their complexity.

The progressive construction can also co-occur with modal verbs and the hypothetical present with werden, e.g.:

31. Er muß am Arbeiten sein. 'He must be working.'
32. Er wird beim Schwimmen sein. 'He must be swimming.'

In sentences 19 and 21 above an alternative progressive construction with sein + dabei + infinitive clause was used. This construction is obviously related to the sein + beim + Nom (Inf) structure discussed in this paper. However, the dabei constructions are more flexible since they allow for any number of complements to be integrated into the infinitive clause. It is interesting to note that the sein + am + Nom (Inf) does not have a corresponding construction with a da-compound and an infinitive clause. 33 below is ungrammatical. However, such constructions do seem to occur in Low German, e.g. 34.[8]

33. *Er ist daran, das Haus zu malen.
34. Sai was an dai Kou to melken. 'She was milking the cow.'
'Sie war daran, die Kuh zu melken.'

Space does not permit here a full-fledged analysis of the semantic range of the German progressive. A comparison with Leech's detailed analysis of the progressive aspect in English shows that the range of the German progressive is more restricted.[9] Both in German and in English the progressive indicates duration, often having the general effect of establishing a temporal frame. Leech pointed out that the choice of the progressive over the simple forms depends essentially on the speaker's point of view, and Dagut bases his whole analysis of the English progressive on the claim that an understanding of the "'simple'/'progressive' dichotomy lies in the realization that it expresses not an objective, but a subjective difference."[10] The choice between the simple and the progressive verb form depends on the speaker's intentions, "on how the speaker regards the event rather than on the supposed actual nature of the event itself."[11] The difference between German and English in the usage of the progressive is that if English speakers intend to characterize an event as being in progress or iterative they have to choose the progressive construction. German speakers, on the other hand, have the choice between the simple form and one of the periphrastic forms expressing duration, since German progressives are usually optional, representing stylistic variations of the simple form in specific environments. Thus in German, both a and b can be answers to 35 below, which is not true for English.

35. Was macht Gisela?
a. Sie spielt Klavier.
b. Sie ist am Klavierspielen.

36. What is Gisela doing?
a. She's playing the piano.
b. *She plays the piano.

Notice that in English the verb form of the question determines that of the answer. In German, on the other hand, there exists no generalized verb form like machen 'to do' that could be used in a question with the progressive form, i.e., 37 is unacceptable.

37. *Was ist Gisela am Machen? 'What is Gisela doing?'

The fact that German Sie spielt Klavier. is neutral with respect to aspect and can mean both 'She's playing the piano.' and 'She plays the piano.' makes the progressive version Sie ist am Klavierspielen. not only optional but it also tends to focus attention on the durative aspect of the progressive when this form is used. In many instances, the use of the progressive indicates that the speaker sees the event "as in some way developing through time by degrees, as being made up of a sequence of stages."[12]

The German progressive seems to occur primarily with two types of verbs, i.e., activity verbs like essen 'to eat', lesen 'to read', arbeiten 'to work', and verbs that signal a transition from one state to another like ertrinken 'to drown', umfallen 'to collapse', and einschlafen 'to fall asleep'. The latter group of verbs also represents an instance where due to the semantic content of these verbs the simple form is not identical with the progressive one. Compare the following sentences.

38.	Hans war am Ertrinken, als ich ihn aus dem Wasser zog.	'Hans was drowning when I pulled him out of the water.'
39.	Hans ertrank, als ich ihn aus dem Wasser zog.	'Hans drowned as I pulled him out of the water.'

In 38, Hans was still alive after leaving the water; in 39 he had drowned. Thus the use of the progressive in 38 has the effect of extending the transitional period while the simple form signals the end result of the transition from one state to another. These examples show that even in German the use of a periphrastic construction with durative force is obligatory if a semantic content as in 38 is to be expressed.

Both in German and in English, progressive constructions can be used to indicate that a brief action is repeated over a limited period of time.

40.	Arme Elke. Sie ist schon wieder am Niesen.	'Poor Elke. She's sneezing again.'

40 can only mean that Elke is sneezing repeatedly over a period of time. This fact is emphasized in the following sentences:

41.	Als ich eintrat, nieste Elke gerade.	'When I entered, Elke sneezed.'
42.	Als ich eintrat, war Elke am Niesen.	'When I entered, Elke was sneezing.'

While in many instances a simple verb form accompanied by the adverb gerade 'right now, at this moment' is equivalent to a progressive construction, this is not the case in 41 and 42. In 41, a specific point in time is emphasized and the fact that the entering and the sneezing happened simultaneously. In 42, on the other hand, the progressive signals that the sneezing started before the entering and continued afterwards. This framing or backgrounding effect of the progressive is especially obvious in

the past tense. In the present tense, the 'now' is assumed as a point of reference without mentioning it specifically. In the past, however, a point of reference has to be established. If this is not done, sentences like 43 seem curiously incomplete in isolation since the foreground information is missing.

43. Peter war am Essen. 'Peter was eating.'

We expect to be told what happened when Peter was eating, e.g.:

44. Als Hans eintrat, war Peter am Essen. 'When Hans entered, Peter was eating.'

There are some areas where German cannot use the progressive like English. For instance, English can use it to extend the time span of an event verb.[13] We can say in English, but not in German:

45. Watch it! He's jumping. *Paß auf! Er ist am Springen.

However, it appears that in general the limitations on the usage of the progressive form in German are not so much due to semantic or functional constraints but rather to syntactic ones.

In conclusion, let me briefly speculate on the historical relationship of the progressive constructions in German and English. According to Jespersen, the present-day progressive form in English developed out of the merger of the "old combination of the auxiliary verb and the participle in -ende; ... and the combination be on + the sb (substantive verb) in which on had become a and was then dropped." Given Jespersen's analysis, it appears that the German am/beim construction and at least one of the sources for the English progressive construction are identical in structure as example 46 and 47 show:

46. He was on-(a) reading.
47. Er war am Lesen.

However, Curme and others claim that a-reading was only a secondary structure which cannot be considered the ancestor of today's progressive form, and that the -ing of the English progressive is not a gerund but a present participle.[15] Dahl, on the other hand, assumes that OE had two coexisting forms with similar functions, namely the be + preposition + nominalized verb and the be + present participle, the former being found in the spoken language, the latter in the written.[16] It is intriguing to contemplate that German, too, appears to have had the two parallel constructions. According to Curme, older German used a periphrastic construction with sein + present participle parallel to the simple verb form but "this distinction did not become firmly fixed" and today this construction is not used any longer.[17] However, the sein + preposition + nominalized verb is, though predominantly in the spoken language. Although the descent of this construction is obscure, I would assume that it is not a

recent development but has been a feature of dialects and the spoken language for a long time. Let me therefore suggest a possible historical scenario. Both English and German had two parallel constructions, the be + present participle and the be + preposition + nominalized verb. In English, the former prevailed, and in German the latter.

It has been my intention to provide a preliminary analysis of the am/beim progressive forms in German. I have shown that German has a specific construction to express duration or action in progress, and that this form parallels in many respects the corresponding English structure. Future research will have to look more closely at the semantic and functional range of these progressive constructions, at their usage in the various language varieties, and at their functioning within a discourse context.

NOTES AND REFERENCES

1. Herbert L. Kufner. The Grammatical Structure of English and German, (Chicago: University of Chicago Press, 1962), p. 72.

2. For a detailed discussion see Harro Gross, Der Ausdruck des Verbalaspekts in der deutschen Gegenwartssprache. Hamburger Phonetische Beiträge, Vol. 15, (Hamburg Buske, 1974).

3. Celtic languages have durative constructions that are syntactically similar if not identical to the German one, namely a be-verb + preposition + nominalized verb, but which have fewer cooccurrence restrictions. P.B. Gregor, Celtic (Cambridge: Oleander Press, 1980), pp. 165-168. Dahl claims that this structure influenced via substratum the formation of OE forms like waes on feohtinge which later developed into the modern version of the English progressive. cf. Ingrid Dahl, "Zur Entstehung des englischen Partizipium Praesentis auf -ing." Norsk Tidskrift for Sprogvidenskap 16, 1952, pp. 1-112.

4. The use of the dative case in the constructions under discussion can be explained as follows: The preposition bei always commands the dative. An, on the other hand, is a two-way preposition, i.e., it will command the dative under essentially static conditions, the accusative if motion towards a goal is involved. Since the progressive construction signals in essence a state, the occurrence of the dative is to be expected.

5. Wladimir Admoni, Der deutsche Sprachbau, 4th rev. ed., (Munich: Beck, 1982), p. 135.

6. The nominalized infinitive can, however, be expanded by a genitive construction especially if beim is used, e.g.: Er war gerade beim Saubermachen seiner Wohnung, als Edith

anrief. 'He was just cleaning his apartment when Edith called.'

7. According to Jespersen, the passivization of progressive constructions in English developed towards the end of the eighteenth century. According to Curme, it developed earlier but only came into full-fledged use towrds the end of the nineteenth century. cf. Otto Jespersen, Growth and Structure of the English Language, (Chicago: University of Chicago Press, 1982), p. 194. George O. Curme, "Development of the Progressive Form in Germanic," PMLA 28, 1913, p. 182.

8. Laurits Saltveit, "Syntax," in G. Cordes, D. Möhn eds., Handbuch zur niederdeutschen Sprach- und Literaturwissenschaft, (Berlin: E. Schmidt, 1983), pp. 322/3. The reduction of the da-compound, in this case daran, to the preposition an, is a common feature of Low German. See, for instance, the reduction of dabei to bi in the following example: Nu is he al bi un krabbelt an den Appelboom hoch. (Nun ist er dabei und klettert auf den Apfelbaum.) 'He's climbing the apple tree.'

9. Geoffrey Leech, Meaning and the English Verb, (London: Longman, 1971) p. 17.

10. M.B. Dagut, "A Semantic Analysis of the 'Simple'/'Progressive' Dichotomy of the English Verb," Linguistics 202, 1977, p. 50.

11. Ibid., p. 51.

12. Ibid., p. 53.

13. G. Leech, see note 9 above, p. 15.

14. Otto Jespersen, A Modern English Grammar, Part IV, Syntax, (London: Allen and Unwine Ltd., 1965), p. 169.

15. G. Curme, see note 7, p. 175. Gerhard Nickel, "Zur Entstehung der Expanded Forms im Altenglischen," in Der englische Aspekt, Alfred Schopf, ed., (Darmstadt: Wissenschaftliche Buchgesellschaft, 1974), pp. 320-355. Fernand Mossé, Histoire de la Forme Périphrastique etre + Participe Présent en Germanique, (Paris: Lib. C. Klinchsieck, 1938), esp. pp. 126-8.

16. I. Dahl, see note 3, p. 102. However, Mossé points out that we know nothing about the spoken language of OE and therefore should discount Dahl's analysis. Fernand Mossé, "Réflexion sur la genèse de la 'Forme Progressive'" in Der englische Aspekt, note 15 above, pp. 377-397.

17. G. Curme, see note 7 above, pp. 159-187.
See also C. R. Goedsche, "Verbal Aspects in German," JEGP XXXIII, 1934, pp. 506-519.

COMPOUND NOMINAL PREFIXING AND ITS IMPLICATIONS FOR SYNCHRONIC NOUN FORMS IN LOKəə*

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1. INTRODUCTION

Nigeria has three main languages: Hausa, Yoruba and Igbo which have over 20 million speakers each[1] and about which much has been written. You may, therefore, have encountered them in your reading. The story of Lokəə, which language is the subject matter of this paper, is, however, different. You are unlikely to have heard anything about it, since it is not much known even in Nigeria outside the area where it is spoken. Yet, from the point of view of linguistics, it is an interesting, even important, language, in that it has one of the most elaborate nominal class systems on record among the 'Ekoid Bantu'[2]languages that straddle the Nigeria-Cameroun border. A brief introduction of the language would, therefore, appear to be necessary, in order to place the phonological and syntactical analysis that follows in its proper linguistic context for the full understanding of the international audience that we have here.

1.1 LOCATION AND CLASSIFICATION OF LOKəə

Lokəə is the language of the Yakəə[3] people who number approximately 300,000[4] and inhabit a rain forest territory 1,000 sq. km. just over 100 km. north of Calabar, the Cross River State capital.

In terms of its linguistic classification, it is generally agreed that Lokəə belongs to the 'Upper Cross' sub-branch of the Delta-Cross grouping that is a member of the Benue-Congo language family (Hansford et al., 1976:178; Greenberg, 1963:9; Williamson, 1971:274). Its neighbours include Mbembe to the north; Agoi to the east, Agwaagune, Adim and Ejagham to the south, and Kohumono and Legbo to the west.

*Lokəə [lòkə́:] has also been referred to in the literature as Lokə (Winston, 1962: passim; Welmers, 1970: 235, 839, 896; Hansford et al., 1976: 121), and Lukö (Westermann and Bryan, 1952: 122). But, as the phonetic transcription indicates, the correct prefix is lo-, not lu-, and the constant noun stem is -kəə, i.e. marked by a long mid central unrounded vowel.

1.2 VOWEL HARMONY AND NOMINAL CLASSES IN LOKƏƏ

The linguistic phenomena usually described under the heading of 'class' in African, and particularly Bantu, languages and their theoretical definitions are well known.[5] They are, therefore, taken here for granted. But we would like to describe and illustrate the occurrence of vowel harmony and noun classes in Lokəə, since these features of the class language under consideration are of immediate relevance to our analysis of compound nominals.

1.21 LOKƏƏ VOWEL HARMONY IN THE NOMINAL SYSTEM

We may take as our starting point the fact that Lokəə operates an eight-vowel system which may be set out in a phonetic chart, thus:

	FRONT	CENTRAL	BACK
CLOSE	i		u
HALF-CLOSE	e	ə	o
HALF-OPEN	ɛ		ɔ
OPEN		a	

These symbols have their usual IPA value.

The chart shows that there is a three-way vowel height contrast at the front and back places of articulation, and a two-way height contrast at the central place of articulation, as well as a two-way front/backness contrast at the high tongue position and a three-way front/backness contrast at the mid and low places of articulation.

A corresponding phonemic chart looks like this:

	FRONT	CENTRAL	BACK
HIGH	i		u
MID	e	ə	o
LOW	ɛ	a	ɔ

The symmetrical arrangement of the vowels captures the various vowel height and front/backness contrasts that form the basis of the operation of vowel harmony in Lokəə.

The system involves only the mid vowels /e/, /ə/ and /o/ on the one hand, and the low vowels /ɛ/, /a/ and /ɔ/ on the other.[6] The rule requires that no mid vowel may, in principle, occur in the prefix vowel position of the same word in which a low vowel realizes the first radical syllable nucleus, and vice versa. In other words, the prefix vowel /e/ alternates with /ɛ/, and /o/ with /ɔ/ according as the vowel occurring in the initial radical syllable is a mid or a low vowel respectively. A few examples[7] may help to make this point clearer:

1.(i) Mid Vowel Harmonic Set		(ii) Low Vowel Harmonic Set	
(a) é-gbé	'swing'	(a) è-tè	'dagger'
(b) ké-pàèm	'swamp'	(b) lè-kpà	'bag'
(c) lè-tóò	'load'	(c) é-kɔ̀	'cloth'
(d) kò-tóóm	'message'	(d) ɔ̀-kpɔ́ɔ̀	'rubber'
(e) lò-tè	'song'	(e) yà-kà	'needles'
(f) ó-kpéà	'hawk'	(f) á-kpɔ̀	'knots'

The low central vowel /a/ sometimes occurs in the prefix of nouns which have a mid vowel in their radical nuclear syllable, e.g.

2 (a) à-tè	'songs'	(b) à-kéém	'compounds'
(c) à-kó	'wars'	(d) kà-kóò	'pig'

A possible explanation for this apparent breach of the rule is that the mid central vowel /ə/ does not occur in the prefix position, as you may have observed in examples 1 (i) (a)-(f) above. This has led to the speculation that /ə/ is in the process of merging with its stronger central vowel counterpart /a/ which frequently functions in the prefix position as a plural morpheme.

Apart from this apparent violation of the vowel harmony system, the rule is strictly applied, especially in compound nominals where it comes into play in the compounding process, as we shall soon see, and no exceptions are allowed.

1.22LOKƏƏ NOMINAL CLASSES AND THEIR PREFIXES

A fundamental phenomenon in Lokəə is the syntactical one of concord or agreement which allows a class of words to govern or control the shape of some other classes of words. The governing words belong to the noun word-class. The governed word-classes include the verb, the adjective, the possessive, the preposition, the pronoun (which may be emphatic or non-emphatic), the demonstrative and the numeral. For our present purpose, we may describe nouns as 'independent' words, in that their prefixes are unpredictable and have to be learnt, and words in the governed classes as 'dependent', since their forms are entirely predictable. Examples of Lokəə sentences will probably illustrate this point better:

3 (i) (a) ò-dém ɔ́-bɛ́ wàná ɔ́-yáú dáà
man their one he-is there

'One of their men is there'

(b) ò-dém wàná ó-béé ſyààsſ
man one he-died today

'One man died today'

(c) ɔ̀-nèn ɔ́-bɛ́ wàná ɔ́-yáú dáà
person

'One of their people is there'

(d) ɔ̀-nɛ̀n wànáˊ ó-béé ɪ́yààsɪ́
person one he-died today
'One person died today'

(e) ú-kpò ɔ́-bɛ́ wànáˊ ɔ́-yáú dáà
towel their one it-is there
'One of their towels is there'

(f) ú-kpò wànáˊ ó-bà-kɛ̀ lòwɪ́
towel one it-died-has water
'One towel has faded colour'

(g) gbáŋgbáŋ ɔ́-bɛ́ wànáˊ ɔ́-yáú dáà
basin
'One of their basins is there'

(h) gbáŋgbáŋ wànáˊ ó-bà-kɛ̀ lòwɪ́
'One basin has faded colour'

(ii) (a) yà-dém yá-bɛ́ yà-pɔ̀ɔ́ yá-yáú dáà
men their two they-are there
'Two of their men are there'

(b) yà-nɛ̀n yá-bɛ́ yà-pɔ̀ɔ́ yá-yáú dáà
people
'Two of their people are there'

(c) yá-kpò yá-bɛ́ yá-yáú dáà
towels
'Two of their towels are there'

(d) gbáŋgbáŋ yá-bɛ́ yǎ-pɔ̀ɔ́ yá-yáú dáà
basins
'Two of their basins are there'

(iii) (a) kè-pɔ́ɔ́ kɛ́-bɛ́ sànáˊ kɛ́-tàmmɪ́-kɛ́
plate their one it-is-old-has
'One of their plates is (now) old'

(b) kɛ́-tɛ̀ kɛ́-bɛ́ sànáˊ kɛ́-tàmmɪ́-kɛ́
trap
'One of their traps is (now) old'

(c) kɪ̀-kùl kɛ́-bɛ́ sànáˊ kɛ́-tàmmɪ́-kɛ́
box
'One of their boxes is (now) old'

(d) sààŋ kɛ́-bɛ́ sànáˊ kɛ́-tàmmɪ́-kɛ́
smoking-rack
'One of their smoking-racks is (now) old'

These examples are many and repetitive; but the three sets should help to make a number of points that, in our opinion, need to be made before we enter upon our subject proper.

We would like to begin by drawing attention to the fact that each set of sentences contains dependent words whose prefix shape or form is determined by independent governing nouns. For instance the nouns at the beginning of sentences 3(i)(a)-(h) govern their dependent words by imposing an o- or ɔ- prefix on the possessive and the verb, and the form wāná on the numeral. The governing nouns in sentences 3(ii)(a)-(d) impose their ya- prefix on their three dependent words. The same thing happens in the third set of sentences.

One conclusion that may be drawn from this concord arrangement is that there exist in Lokəə groups of nouns which govern the same concord markers or elements. Each distinct set of concord elements implies a distinct concord nominal group or 'class'. And since there are fourteen such distinct sets of concord elements in Lokəə, it is taken that the language has fourteen nominal classes. A table will be set up to show these various classes.

But before we do that, it should be observed from these examples that nouns may or may not display a prefix in their synchronic form. gbáŋgbáŋ and sààŋ are examples of nouns which may be described synchronically as zero-prefix.[8] Nouns displaying a prefix may have a primary or a secondary prefix. The primary prefix is the one displayed by such dependent words as the verb and the possessive. The secondary prefix is not carried by concordant dependent words. When the choice of the prefix vowel is between o- and ɔ- or between e- and ɛ-, the rule of vowel harmony applies. The o- and ɔ- prefix vowel alternation may, therefore, be conveniently represented by the morphophoneme O-. Similarly, the e- and ɛ- alternation may be symbolized by the morphophoneme E-. These two symbols are employed in the table that now follows. The symbol ø- precedes zero-prefix nouns in the table.

TABLE OF NOUN CLASSES IN LOKƏƏ:

NOMINAL CLASS	CLASS PREFIX(ES)	EXAMPLES
1	O-	ò-sèèn 'visitor'; ɔ̀-bàsɛ̀ 'deity'
	u-	ù-tɛ̀lɛ̀ 'vulture'; ú-kpò 'towel'
	ø-	ø-kpákpà 'peanut'; ø-gbáŋgbáŋ 'basin'
2	ya-	yà-sèèn 'visitors'; yà-bàsɛ̀ 'deities' yà-tɛ̀lɛ̀ 'vultures'; yá-kpò 'towels'
	ø-	ø-kpákpà 'peanuts'; ø-gbáŋgbáŋ 'basins'
3	yi-	yí-yòòl 'weasel'; yì-tɔ̀ 'he-goat'
4	yO-	yó-yòòl 'weasels'; yɔ̀-tɔ̀ 'he-goats'
	yu-	yù-gáú 'body-hair'

CLASS	PREFIX(ES)	EXAMPLES
5	kE-	kè-bà 'squirrel'; ké-pémì 'wing'
	ki-	kì-fàl 'comb'; kì-kùl 'box'
	ø-	ø-dèèl 'night'
6	yE-	yè-bà 'squirrels'; yé-pémì 'wings'
	yi-	yì-fàl 'combs'; yí-kùl 'boxes'
	ø-	ø-dèèl 'nights'
7	E-	é-fém 'crocodile'; è-bàlà 'ravine'
	ɨ-	ɨ-sàntù 'hippopotamus'
	ø-	ø-yɔ̀ɔ̀l 'snake'
8	N-	N̄-fém 'crocodiles'; N̄-bàlà 'ravines'
		Ǹ-sàntù 'hippopotamuses'; Ǹ-béém 'cheeks
	ø-	ø-yɔ̀ɔ̀l 'snakes'
9	lE-	lè-kòì 'drum'; lè-mà 'hole'
	ø-	ø-jùúmmà 'nose'
10	a-	à-kòì 'drums'; à-mà 'holes'
	ø-	ø-jùúmmà 'noses'
11	lO-	lò-póó 'ladle'; lɔ̀-dà 'folktale'
	lu-	lú-jí 'food'; lú-kùùl 'hut'
12	ka-	kà-kóò 'pig'; kà-wɔ́ŋ 'top', sky'
	ø-	ø-kòòwé 'tomorrow'
13	kO-	kò-kéém 'fence'; kɔ̀-káà 'crab'
	ku-	kù-béém 'lie/cheek'
14	li-	lì-póó 'ladles'; lì-dà 'folktales';
		lí-jí 'foods'; lì-kóò 'pigs';
		lì-kéém 'fences'; lì-káà 'crabs';
		lì-béém 'lies'; lì-téémì 'farm'
	ø-	ø-wòól 'body'

2.0 COMPOUND NOMINALS IN LOKəə

Compound nominals occur very frequently in Lokəə. No-one has done an exact count of simple and compound nouns, but it is perhaps not an exaggeration to suggest that compound nominals are nearly as common as simple nouns in the language, and therefore learning how to form them is an important part of learning the language.

2.1 THE STRUCTURE OF COMPOUND NOMINALS

In one way, compound nominals are like simple nouns: they both have the structure

$$\pm \text{ PREFIX} + \text{STEM}$$

But the compound nominal differs significantly from the simple noun in that the stem of the compound nominal is characterized by the presence of two or more smaller stem morphemes derived

from simple nouns constituting it.

Examples of + Stem-structured compound nominals are:[9]

4 (a) ø-yɔ̀ɔ̀l-tú ⟵ ø-yɔ̀ɔ̀l + lè-tú
'snake's head' snake head

(b) ø-jɛ̀ɛ̀n-kpááŋ ⟵ ø-jɛ̀ɛ̀n + kɛ̀-kpááŋ
'eye-lid' eye cover

And examples of + Prefix + Stem-structured compound nominals are:

5 (a) lɔ̀-bɛ́-wí ⟵ lɛ̀-bɛ́ + lò-wí
'breast milk' breast water

(b) lɛ̀-bɔ́ɔ́-kòòl ⟵ kɔ̀-bɔ́ɔ́ + lè-kòòl
'wrist' arm neck

The difference between the two sructures is the absence in the first structure of the prefix which occurs in the second structure. But more significantly, there is no embedding of one component noun within another in the first structure, whereas in the formation of the second type of compound nominal, one noun forms the matrix inside which the other non-basic noun is embedded. This process has been labelled 'embedding', because the inner noun behaves like an insert, while the outer noun behaves like a matrix.

2.2 COMPOUND NOMINAL PREFIXING

The occurrence or absence of a compound noun prefix is determined by a number of factors.

A compound nominal occurs without a prefix, when the first constituent noun occurs without a prefix in its synchronic form, e.g.

7 (a) ø-bùúsì + ø-yɛ̀ɛ̀n ⟶ ø-bùúsì-yɛ̀ɛ̀n
cat eyes 'eyes like a cat's'

(b) ø-yìì̀l + è-tí ⟶ ø-yìì̀l-tí
hair stick 'a single hair'

This happens even when one of the other constituent nouns has a prefix of its own, as in example 7(b).

But a compound nominal occurs with a prefix, when the first constituent noun occurs with a prefix in its isolate form, e.g.

8 (a) ɔ̀-bàsɛ̀ + kɛ̀-kpááŋ ⟶ kɛ̀-bàsɛ̀-kpááŋ
deity cover 'sky'

(b) è-tì + lɛ̀-mà ⟶ lɛ̀-tì-mà
road hole 'door-way'

(c) ɔ̀-káálâŋ + ú-kpò ⟶ ú-káálâŋ-kpò
white man towel 'white man's towel'

(d) lɛ̀-bɛ̀ɛ̀m + yù-gáú ⟶ yù-bɛ̀ɛ̀m-gáú
chin hair 'beard'

2.21THE SHAPE AND TONE OF THE COMPOUND NOMINAL PREFIX

Note, in examples 8 (a) and (b), that the prefixes of the compound nominals are very much like those of the final constituent nouns in their isolate form, and in examples 8 (c) and (d), that it is the actual prefixes of the final constituent nouns that emerge as the compound nominal prefixes.

The significant point here is that the shape of the compound nominal prefix is determined by the shape of the prefix of the final constituent noun of the compound nominal, i.e., if a compound nominal occurs with a prefix, the prefix will have a CV-, V- or N- structure depending on whether the final component noun of the compound nominal has a CV-, V- or N- structure respectively, the tongue-height for articulating the O- and E- vowels being determined by vowel harmony, and the articulation of the syllabic nasal being homorganic with the following consonant. The consonant (C) and the vowel (V) are always those occurring in the prefix of the final constituent noun.

Examples:

9 (a)	é-fém crocodile	+	kɔ̀-kpááŋ skin	⟶	kɔ́-fém-kpááŋ 'crocodile skin'
(b)	yà-tù wine	+	lɛ̀-kòlá calabash	⟶	lɛ̀-tù-kòlá 'calabash of wine'
(c)	lɔ̀-wí water	+	ɔ̀-bɛ̀lɛ̀ pot	⟶	ɔ̀-wí-bɛ̀lɛ̀ 'water-pot'
(d)	ɛ̀-tɔ́ house	+	Ǹ-gàm back	⟶	Ǹ-tɔ́-gàm 'back of the house'

This happens even when the final constituent noun has no prefix of its own in its synchronic form, e.g.

10 (a)	è-wì sunshine	+	ø-jɛ̀ɛ̀n eye	⟶	lɛ̀-wì-jɛ̀ɛ̀n 'sun'
(b)	lɔ̀-wí water	+	ø-yɔ̀ɔ̀l snake	⟶	ɔ́-wí-yɔ̀ɔ̀l 'river-snake'

With regard to the tone of the compound nominal prefixes, our analysis shows that the tone may be low or high. It is low, when all the component nouns have prefixes marked by low tone, e.g.

11 (a)	è-fɛ̀ɛ̀l rabbit	+	lɛ̀-mà hole	⟶	lɛ̀-fɛ̀ɛ̀l-mà 'rabbit's hole'
(b)	ɔ̀-káálàŋ white man	+	è-jáú rope	⟶	è-káálàŋ-jáú 'string'

and high, when at least one of the component nouns has a prefix marked by high tone, e.g.

12 (a)	é-fém crocodile	+	lɛ̀-gà tooth	⟶	lé-fém-gà 'crocodile's tooth'
(b)	ɔ̀-nɔ̀ɔ̀tàm old person	+	é-kɔ̀ cloth	⟶	é-nɔ̀ɔ̀tàm-kɔ̀ 'old cloth'

In other words, when a prefixless final constituent noun combines with another noun occurring as a first constituent with a low-tone prefix to produce a compound nominal with a high-tone prefix, it is to be taken that the generated prefix is that of the synchronically zero-prefix noun in the final component position and that its tone is high, e.g.

13 é-sàámà + ø-dèél ⟶ lɔ́-sàámà-dèél
corn year 'corn-year'

3. CONCLUSION:

THE IMPLICATIONS OF SURFACING PREFIXES FOR ZERO-PREFIX NOUNS

This analysis would appear to have very significant implications for nouns currently described as zero-prefix. For it seems to suggest, for instance, that the existing prefixless nouns, such as wòól 'body', once had prefixes which now resurface whenever these nouns realize the final constituent position in a compound nominal occurring with a prefix. This appears to be at least a logical conclusion to come to when it is observed that the same prefix reappears whenever the corresponding 'zero-prefix' noun occurs as the final constituent of a compound nominal. The following examples illustrate the point:

For wòól, li- always reappears as prefix of the compound nominal, e.g.

14 (a) é-kpómé + ø-wòól ⟶ lí-kpómé-wòòl[10]
bottle body 'body of a bottle'

(b) kè-báá + ø-wòól ⟶ lì-báá-wòòl
corpse body 'corpse-like body'

For wèén, O- always reappears as prefix of the compund nominal, e.g.

15 (a) è-tèén + ø-wèén[11] ⟶ ɔ̀-tèén-wèèn
animal child 'small animal'

(b) kè-tí + ø-wèén ⟶ ò-tì-wèèn
tree 'small tree'

For dèél, lO- always reappears as prefix of the compound nominal, e.g.

16 (a) ɔ̀-bàsè + ø-dèél ⟶ lɔ̀-bàsè-dèél
rain year 'rainy year'

(b) yè-jó + ø-dèél ⟶ lò-jó-dèèl
yams 'a good yam year'

For jèèn, lE- always reappears as prefix of the compound nominal, e.g.

17 (a) è-bú + ø-jèèn ⟶ lè-bú-jèèn
goat eye 'goat's eye'

(b) yò-káká + ø-jèèn ⟶ lè-káká-jèèn
watching 'envy'

And for yɔ̀ɔ̀l, O- always reappears as prefix of the compound nominal, e.g.

18 (a) yò-jí + ø-yɔ̀ɔ̀l ⟶ ó-jí-yɔ̀ɔ̀l
palm tree snake 'palm-tree snake'

(b) lò-wí + ø-yɔ̀ɔ̀l ⟶ ó-wí-yɔ̀ɔ̀l
water 'river-snake'

We may take the theory one step further and assign tones to these derived prefixes: low tone for the prefixes of wòól, wèén, dèél and jèèn, and high tone for the prefix of yɔ̀ɔ̀l, since the tone of a compound noun prefix is high only when at least one of the constituent words has a high-tone prefix.

But an interesting and crucial question is whether the derived prefixes belong to the same nominal classes as the zero-prefix nouns themselves, for, if they did, it would be incontrovertible evidence that the prefixless nouns did not only once have prefixes, but that their missing prefixes were those that have been derived. Our examples show that li-, O-, lO- and lE- are the appropriate prefixes for the nominal classes to which wòól, wèén, dèél and jèèn belong, namely, 14, 1, 11 and 9 respectively. But there is a divergence between the nominal class of yɔ̀ɔ̀l, which is 7, and the class 1 suggested by the derived O- prefix. A possible explanation for this divergence is that yɔ̀ɔ̀l may have ceased to belong to nominal claas 1 once it had lost its O- prefix, and that it subsequentlly attached itself to nominal class 7 rather than to any other class because many nouns denoting animals belong to that class. Work on Lokəə proto-noun forms must take account of this prefix-generating mechanism of synchronic noun compounding in Lokəə.

NOTES

1. Projected population figures. The last census in 1963 gave Hausa speakers 11,652,745; Yoruba 11,320,509; Igbo 9,246,388.
2. Crabb's term is used here to refer, more accurately, to all the Ekoid languages spoken in the Cross River basin.
3. As with the language, the name of the people appears under various forms: Yakö in Forde; Yakur(r) in Hansford et al., Bendor-Samuel and in administrative documents.
4. Projected population as contained in the Statistics Bulletin of the Cross River State Ministry of Economic Development, Calabar. The Yakəə population in the 1963 census was 100,000.
5. For these, cf. Guthrie 1948(a), esp. pp. 11-16; 1948(b) & 1956; Whiteley 1960,esp. pp. 151-3; Welmers 1973:162; De Wolf:27-9.
6. When the radical nuclear syllable vowel is either of the two high vowels,/i/ or /u/, the prefix vowel is morphologically determined, e.g. è-kpí 'rat' and ɔ̀-kpí 'spitting cobra'.
7. All transcription is phonemic unless otherwise stated. The hyphen separates morphemes. The acute accent marks high tone, the grave accent low tone. A colon indicates vowel length.

8. For the criteria used in determining current zero-prefix nouns in Lokəə, cf. Iwara:51-2.

9. The sign ⟶ indicates derivation.

10. The tone pattern of a compound nominal may differ slightly from that of the constituent simple noun stems, as in this example.

11. It should be observed, in passing, that the noun wèɛ́n is frequently used as a diminutizing affix.

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THE FICTION OF THE ZERO MORPHEME AND THE VALIDITY OF THE ZERO ALLOMORPH

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Among the complications of morphology, the one I intend to explore can be illustrated from many if not all languages. For simplicity I will begin with English examples. Any analysis of the pluralization of nouns, except for the most superficial, must point out that nothing is added to some nouns, such as *sheep*, even though the reference is to more than one. Thus the difference between *The sheep were slaughtered* and *The sheep was slaughtered* is not indicated by the noun *sheep* but by the verb *were* or *was*. In *The sheep died* no difference between plural and singular is indicated at all.

Take the grammatical statement that the noun in *The sheep were slaughtered* is plural. To object to it would be hypercritical, if the statement did not prompt the unwarranted inference that there has to be something formal to make this noun plural. Then, since there is manifestly nothing in the word *sheep* to differentiate it from *sheep* with a singular reference, that very nothing gets treated as though it were a formal element. So we come out with what is called the zero morpheme, or -- as some prefer -- the zero morph.[1]

Let's not exaggerate the error in this widely adopted expression. It amounts to a case of misleading terminology. Through overgeneralization, all nouns that refer to countable things are supposed to have a plural form besides the singular, as most of them have in fact. While terms ineptly chosen do not always carry with them a mistaken concept, the zero morpheme or morph does unfortunately divert us from paying attention to whatever may be semantically different about the nouns that have no distinct plural form. *The sheep were slaughtered* refers to a plurality; so does *The goats were slaughtered*, but nonetheless *the sheep* and *the goats* evince a difference in classification -- meaningful and understandable, not arbitrary.

This may not be instantly obvious, as neither *the sheep* nor *the goats* allows an alternative, **The sheeps were slaughtered*, **The goat were slaughtered*. For some other nouns, however, we have both possibilities:

The buffalo were slaughtered.
The buffaloes were slaughtered.

The physical, external reference of these two sentences may be the same; but the animals are treated as collective in *the buffalo*, plural in *the buffaloes*. We are more likely to say *The buffalo were slaughtered* when we are thinking of the species as a whole or of a certain herd. *The buffaloes* makes them out rather

to be separate individuals -- a less frequent expression, as these animals are by nature so gregarious. The plural form *buffaloes* would suggest one slaughtered here, another there.

It will occur to many that goats too are gregarious. But a fact of nature need not prevail in a language, and does not on the whole prevail over human experience. The English people were not familiar with flocks of goats, as they were with flocks of sheep. Nowadays, when only a minute part of the English-speaking community knows either species at first hand, enough indirect or vestigial knowledge still lingers from the past to keep the distinction, at least in standard English, as it has been over the centuries. So a meagerly informed city-dweller can say *We followed like sheep*.

A doctrinaire notion of synchronic linguistics might refuse to see anything beyond the apparent parallel in the slots for the plural *goats* and *sheep*. But if we care for the complex reality of language, we have to observe how the heritage from the past is actually disposed of. It is neither like cash that we can exchange for whatever we want, nor like junk that we can simply throw away and forget. Instead it consists of innumerable habits of saying certain things in various situations. It is liable to change, eventually to drastic change.

The grammatical category that *sheep* exemplifies goes back to a large set of neuter nouns in Old English which had no ending in either singular or plural for the nominative and accusative. While gender was radically reformed in Middle English with a huge shift from masculine and feminine to neuter, this particular type of neuter lost much more than it gained. There remained only *sheep*, *swine*, and *deer* (to cite them as they have been standardized in modern English); the three had something in common, being sociable animals important to man for their meat and their skin-products. So they became the nucleus for a growing class of nouns that first drew in *fowl* and *fish*, former masculines which up to then had had the regular plural morpheme *(-as* in Old English). This has persisted optionally, though with some phonetic reduction, down to the present; we still say *fishes* and -- rarely -- *fowls*, mainly when they do not appear to belong together. But the ordinary human concern with these creatures makes us resort to the collective terms *fish* and *fowl* much oftener. In recent centuries many kinds of creatures, analogous to the old core of the category, have been spoken of either with no plural morpheme uniformly, like *sheep*, *swine*, *deer*, or with or without it, like *fishes/fish*, *fowls/fowl* -- the shorter form being preferred; e.g., *buffalo*, *antelope*, *salmon*, *quail*.[2]

I am not prepared to insist that all cases of a so-called zero morpheme, in any language, are so demonstrably misnamed as this case of the plural in English. If we have information about the earlier state of a language, we can often trace the spread of a certain morpheme until it becomes a general rule; then we note the exceptional circumstances where it does not take hold, and sometimes we can explain why.

Whereas adverbs in English are formed on the whole by adding

the morpheme *-ly* to adjectives, there are also a few adjectives that without the morpheme still function virtually as adverbs. *Fast* is the one that comes to mind immediately. It survives from the period when it was normal for any given word that functioned adjectivally to function adverbially also, with no difference in its form. The common Germanic use of this suffix is to form adjectives from nouns, as in *king : kingly*. But already in Old English (when it was still pronounced *-lic*) it began being applied, somewhat paradoxically, to differentiate adverbs from adjectives. This usage gradually became more frequent as numerous adjectives were borrowed from Latin and French, where the morphological differentiation of adverbs was an overwhelming rule. The model worked upon native English adjectives too, such as *great : greatly, weak : weakly,* in the Middle and modern periods, but much less so in substandard usage[3] -- a fact that points further to the influence of the learned Continental languages on educated Englishmen.

The adverb *fastly* was formed in Old English in the sense of 'fixedly, steadily'; but in the sense that now prevails, Middle English shows *fast* functioning adverbially around the beginning of the thirteenth century and adjectivally a century later. Indeed it would be a grammatical misstatement to treat the adverbial function of *fast,* ever since then, as secondary in some way. Rather, *fast* is an adverb that serves also as an adjective; but English has no morphological means of making an adjective based on an adverb. So, as in the case of the collective noun *sheep,* which serves also as the singular although there exists no morphological marker of the singular, in the case of *fast* we have a remnant of a rule that used to be prominent -- the morphological identity of adjective and adverb. The French word *vite,* which means the same as the English *fast,* displays the same grammatical anomaly too, not because one language has copied the other on this point but because the nature of the semantic field links *fast* or *vite* to verbs primarily; e.g., *Walk fast, Marchez vite.*

There are, to be sure, some adverbs in *-ly* used more often than the adjectives that they are formed from; e.g., *generally, probably, officially, rarely.* Most of this is borrowed vocabulary; and no matter whether the particular adjective or the adverb was used earlier in English, either way the word belongs to a Latinate sub-system of the English language that routinely entails suffixation to form adverbs. Within the native core of English, that process is less thorough-going, more liable to be blocked by causes such as the one that operated against *fastly.*

A further reason for not positing a zero morpheme at the end of *fast* is that the word falls short of the full syntactic resources of an adverb that actually has the suffix *-ly.* For instance, such an adverb can be placed at the beginning of a sentence or right before the verb, especially in a literary style: *Hastily he copied the message* or *He hastily copied the message,* as well as *He copied the message hastily;* but there is no alternative to *He copied the message fast.*[4] Thus there are adverbs and adverbs; the ones with *-ly* and the ones without it are by no

means identical in their functioning. Nor are the ones without *-ly* all to be lumped together. Unlike *fast*, *first* can often come at the beginning of a sentence: *First eat; then leave.*

In languages more inflected than English there are numerous phenomena of neutralization, where adding one morpheme precludes another. In Greek, for instance, the simplest form of most verbs is the imperative singular, such as ἄγε 'do,' ἄκουε 'hear, listen.' By suffixation it is made indicative: ἄγεις 'you do,' ἀκούεις 'you hear'; or with another suffix the imperative form is made plural: ἄγετε, ἀκούετε. That plural suffix has exact cognates in Latin and Sanskrit: *agite*, {ájata}; but in Greek just the same suffix and nothing more is used when the meaning is plural indicative, as in τοῦ κήρῡκος οὐκ ἀκούετε; 'Don't you hear the herald?' (Aristophanes, *Acharnenses* 1004; imperative in 1000). In Latin, to make the verb indicative, the suffix *-s* is added to both the singular imperative and the plural imperative:

age 'do'	*agis* 'you do' (singular)
agite 'do'	*agitis* 'you do' (plural)[5]

The plural indicative of the second person is formed quite differently in Sanskrit:

{ája	ájasi} (singular)
{ájata	ájatha} (plural)

We are not entitled to infer that Greek or its forerunner, at some prehistoric stage, gave up a certain plural indicative form and made the plural imperative serve for the indicative too. It may or may not have come about that way. But by a synchronic analysis, ἄγετε -- while formed as the plural of the imperative ἄγε -- serves also as the plural of the indicative ἄγεις. The context will usually, but not always, show which interpretation is appropriate, the imperative or the indicative. For this particular verb it is the imperative far more often; but that is not so for many other verbs.

This asymmetry between the plural and the singular may be subsumed under a tendency to economize on morphology, by not piling on another subsidiary morpheme for another distinction in meaning when one morpheme is already there to make some fundamental distinction. The term zero morpheme or zero morph may convey indirectly the very point that a distinction that the language makes elsewhere by a morpheme is here perceptible only through the context, if at all. But to give a zero morpheme credit for the distinction is self-deceptive bookkeeping.

The expression that I have objected to is an outgrowth of Saussure's *Cours de linguistique générale*. The "zero" part is there; it was joined to "morpheme" or "morph" later in the history of structuralism. It is not my intention to trace this terminology through the successors of Saussure, nor to dig up any antecedents that he may have had. I must remark, however, that the phenomena from which came the idea of the morphological zero were of another sort than the ones I have been analyzing. Saussure gave as examples of a zero ending *(désinence zéro)* the French imperative singular [marš] in contrast to the cohortative [maršõ]

'let's march,' the Greek imperative singular ζεύγνῡ 'yoke, join' in contrast to the plural ζεύγνυτε, and the Czech genitive plural noun *žen* 'women's' in contrast to the nominative singular *žena*, the nominative plural *ženy*, etc.[6] The first two are easily analyzed as very simple morphology. The added morpheme makes the longer word convey an additional meaning. ζεύγνυτε, like my Greek imperative plurals ἄγετε and ἀκούετε, commands more than one person. So it is not at all surprising to find it marked with the syllable -τε, although English some five hundred years ago eliminated a comparable morpheme for the plural of the imperative.[7] As for [maršõ], we have no trouble understanding that it takes another morpheme [õ] at the end, right after [marš], to communicate 'along with me' or 'while I do it too.' In English we put it in front: *let's march*.[8]

Though there is no direct evidence, Saussure may have been thinking of the zero written in the Arabic numbers (or more accurately the Hindu numbers)[9] *20*, *30*, etc. [marš] and ζεύγνῡ would be like *trente*, whereas [maršõ] and ζεύγνυτε would be like *trente-deux*, *thirty-two*. If that was his model, it was unfortunate to apply this notational device to the theory of morphology in language. Writing *30* shows a two-digit number, equal to ten times three; the economy of this notation requires the zero to distinguish *thirty* from *three* on the one hand and from *thirty-one*, *thirty-two*, on the other.[10] So *32* signifies 'ten-times-three plus two,' but with 'ten-times-' understood from the placement of the *3* to the left of the *2*; and in *30* the zero is a mere prop that the *3* is placed beside in order to stand for 'ten-times-three' rather than just 'three.' But in the word *trente* or *thirty* there is a morpheme for 'ten-times-,' [-ãt] or *-ty*. The morphemic structure comes out most obviously in [sɛ̃kãt] -- [sɛ̃k] 'five' + [-ãt] 'ten-times-' -- and the higher English numbers *sixty*, *seventy*, *eighty*, *ninety*.

The zero posited in [marš], or in an English example such as the singular noun *goat*, seems to me superfluous. The simplest form of the verb in French is the imperative singular. Similarly, in English, the noun in itself is singular if it refers to anything countable. We need only state that in the absence of a plural morpheme [-s] *the goat* or *my goat* is understood to refer to one, not more than one. If morphemes were needed to express both sides of a semantic opposition, we would have to recognise zero morphemes galore. *Prince* would have not only one to distinguish it from the plural *princes* but another zero morpheme to distinguish it from the feminine *princess*, and even another to distinguish it from the adjective *princely*.

The genitive plural in the Slavic languages offers a better likelihood of a valid zero morpheme, but still not good enough. In the earliest of them, Church Slavonic, женъ 'women's' had a case-ending that consisted of the vowel [ə]. Of all the vowel-sounds this one was most prone to erosion and does not survive in most of the modern Slavic languages.[11] The lack of a vowel there, at the end of the word, serves now to make it genitive plural as effectively as a certain vowel used to. So far Saussure was jus-

tified in maintaining that this had come about by "pure accident," and that the fact of a phonetic difference is crucial, not what in particular the phonetic difference consists of. I would go on, however, to argue that this genitive plural is not only unmarked morphologically but may also be in a way unmarked semantically. In the old Indo-European languages generally the distinctions of gender were to a great extent neutralized in the genitive plural; and in Slavic the syntactic field of the genitive case is much broadened. So a form like *žen*, with no ending, is a noun devoid of classification and thus primary.

Any parallels to this in English are pretty scarce or remote. In Russian, where the bulk of masculine nouns have acquired a genitive plural ending to distinguish them from the bare nominative singular -- e.g., воро́в from вор 'thief' -- one group retains the unsuffixed genitive plural but suffixes all the singular forms. These nouns express social status or the like:

боя́р 'the nobles'	боя́нин 'a (the) nobleman'[12]
дворя́н "	дворяни́н "
гра́ждан '(the) citizens'	граждани́н 'a (the) citizen'
cf. 'the commons'	'a (the) commoner'
англича́н 'the English'	англича́нин 'an (the) Englishman'

As the glosses suggest, here the collective is primary, and the individual is derivative. We can readily understand this from our knowledge of society, especially before the modern tendencies toward disintegration. It takes a bold step for us to go on from these masculine group-nouns to the feminine gender as a whole -- e.g., гор (genitive plural), горá (nominative singular) 'mountain' -- and the neuter as a whole, as in мест (gen. pl.), мéсто (nominative-accusative singular) 'place.' Yet it is grammar turning a language upside down to say, in the old fashion, that гор or мест is formed by dropping the ending of горá, мéсто -- or the equivalent in more up-to-date terms, that гор and мест have a zero morpheme for the genitive plural.

The grammarian's tables of nouns all begin with the nominative singular. He makes the language conform, or seem to conform; but this is, at best, a pedagogical convenience for the sake of systematically covering the diverse morphological patterns. We can entertain some reasonable doubts of its pedagogical effectiveness -- let alone its validity for linguistic science.

Up to now I have been showing how the zero, or lack of a morpheme, should not be taken for a virtual morpheme but rather alert us to something semantic that makes a morpheme inappropriate. But let's turn to cases where a morpheme is truly reduced to zero by an untoward phonetic context. The English morpheme of possessive meaning, homophonous with the pluralizer of nouns but written *'s* with an apostrophe, is missing in *Jesus' mother, Moses' mother*, whereas we say *Mitch's mother, John's mother, Mark's mother*. As this morpheme exists in the allomorphs [-ɨz, -z, -s], depending on the environment, it is furthermore reducible to zero in one unwieldy environment. Either *Charles's mother* or *Charles' mother* is normal; for right after the voiced sibilant at the end of the name we may either pronounce the suffix or omit it. When

omitted, it can properly be called a zero allomorph. The context would nearly always avert a misunderstanding. Even though [ˈčarlzbˈʌtlr̥] could be either the butler who works for Charles, with the zero allomorph *(Charles' butler)*, or just a man whose surname is Butler, in any given situation the chance that both interpretations would be pragmatically possible is infinitesimal: the speaker would have to know both a Charles Butler and another Charles who has a butler.

This zero allomorph is mostly optional, and therefore omissible only in a clearly possessive context; e.g., *Who told you, James' mother or Charles's?* If I were to say *James' mother or Charles'*, [čarlz] would probably be taken to mean not Charles' mother but Charles himself. In *Jesus' mother* or *Moses' brother* the presence of two sibilants in the name just about precludes **Jesus's, *Moses's;* so here the zero allomorph is obligatory.[13]

Some zero allomorphs, produced by phonetic constraints that operated formerly, persist although the phonology of the language has changed. The morpheme now pronounced [-d] or [-ɨd] for the past tense (and past participle) was reduced to a zero allomorph after many verbs that end in *-t* or *-d*, such as *hit, cut, put, spread, shed*, so that apart from the third person singular of the present -- *he hits*, etc. -- the past and the present tense came out alike. Some fluctuation in these verbs continued for centuries and is amply documented in the *Oxford English Dictionary*, but by 1600 the forms now current were pretty well standardized. In some special environments, however -- e.g., *hunted, hated, mounted, rounded* -- the allomorph with the separating vowel had always been normal; and in more recent times it has been extended to new verbs: *they embedded, they sledded*, in contrast to the present *they embed, they sled*.

The difference between old and new verbs is neatly illustrated by *they put* [put] with the morpheme reduced to zero and *they putted*. [pʌt] was the Scottish dialect pronunciation of the ordinary English verb. With that vowel-sound, and in a narrowly limited meaning, it came into standard southern English along with the Scottish national game of golf in the eighteenth century and still more in the nineteenth. The variant spelling *putt* was fastened upon to differentiate it from the usual English *put*. But the past form *putted* is not due to anything in the Scottish dialect but to the altered English rule that now calls for the syllabic [-ɨd] after any [t].

Since the type exemplified by *embedded* or *putted* has thriven but the zero type remains prominent in the basic vocabulary, a good grammar cannot relegate either of them to the margin of the language. The zero type subsists as a relic from the time when it was just a normal allomorph of [-d], totally reduced in a certain environment. The term zero allomorph is still proper for the past tense *hit, spread*, etc., to this extent: it is phonologically restricted to an apical plosive consonant at the end, but not semantically restricted, whereas the nouns *sheep, deer, salmon* are semantically but not phonologically restricted.[14]

French is full of zero allomorphs, because most consonants

at the end of a word -- though still obligatorily written -- are pronounced only if closely linked to an ensuing word that begins with a vowel. Thus in *leurs anciens amis* 'their old friends' the morpheme [-z] makes the two adjectives plural. But in *leurs bons voisins* 'their good neighbors' for centuries it has been dropped as unpronounceable in that consonantal environment; and since the [-z] at the end of the noun has also been dropped, it all sounds exactly the same as the singular *leur bon voisin* 'their good neighbor.'

The linguistic term allomorph is not used uniformly. In my judgement it should be limited to morphs that are related phonetically; the conditions favoring one or the other will then be statable in phonological terms. Otherwise, morphs that have the same meaning or syntactical function are synonymous morphemes -- e.g., the noun-forming suffixes in *greatness* and *hostility* -- no less than *beak* and *bill* are synonyms, or *dolphin* and *porpoise* (except in the vocabulary of zoological experts). As synonyms are interchangeable in some contexts, so we say *passiveness* or *passivity*, *trivialness* or *triviality*, but only *causality* (not **causalness*) and *usualness* (not **usuality*). The lack of a morpheme to distinguish *quiet* as a noun from *quiet* as an adjective should not be diagnosed in morphological terms at all -- neither a zero allomorph of *-ness* nor a zero morpheme. For English abounds in syntactical overlapping, since many a word can function as either a verb or a noun, either an adjective or a verb.[15]

Behind the abuse of the zero in linguistics there lurks an implicit ideal of regimented morphology: one morpheme -- no more, no less -- to be isolated, pin-pointed for each and every meaning or function. Experience with any real language is bound to discredit this futility; but the analytical, grammatical mind clings to vestiges of it.

NOTES

[1]An excellent critique by W. Haas, "Zero in Linguistic Description," *Studies in Linguistic Analysis* (Oxford, 1957; repr. 1962), pp. 33-53. While I have profited greatly from his diagnosis of many fallacies, the ground I cover is mostly different from his.

[2]See my article, "Tradition and Psychological Reality in the Categories of Morphology, Illustrated by the Plural of English Nouns," *Actes du X^e Congrès International des Linguistes, Bucarest, 28 août - 2 septembre 1967*, III (1970), 319-320.

[3]H. Poutsma, *A Grammar of Late Modern English*, II.2 (Groningen, 1926), 634.

[4]*He fast copied the message* has a disagreeably archaic ring. *Fast he copied the message* does not sound like real English at all, while *Fast copied he the message* evokes a past age when such inversion of verb and subject was normal.

[5]In a post-accentual syllable of a Latin word *ĕ* and *ĭ* are nearly in complementary distribution, because final *-ĭ* and post-accentual but non-final *-ĕ-* are so rare. Numerous morphemes are like *-te/-ti-* in having two such allomorphs.

[6](3d ed.; Paris, 1949), pp. 123-124, 163, 254-257.

[7]Even so, the subsequent translators of the Bible often felt obliged to express the meaning of the Latin plural imperative -- e.g., *expectate* (Gen. 22:5), *quaerite* (Matt. 6:33, Luke 12:31) -- by means of an English pronoun: *abide ye* (or *abide you), seek ye.* When their scholarship advanced to the point of subordinating the Latin Vulgate to the Hebrew original of the Old Testament and the Greek of the New -- notably in the King James version of 1611 -- the morphology of these more ancient languages could only reinforce the commitment to *abide ye, seek ye,* and the like.

[8]See my article, "The Imperative, in Relation to Other Verbal Forms or Functions," *The Sixth LACUS Forum 1979,* pp. 162-169.

[9]Leonard Bloomfield indeed credited the Hindus with devising the "zero element" in morphology. As an example of it he gives the English plural noun *sheep; Language* (New York, 1933), p. 209.

[10]In the Greek numerical notation, which was the best until the Hindu or Arabic superseded it, there was no zero. ϡ (the twelfth letter of the full Greek alphabet, along with a little mark) stood for τριᾶκοντα 'thirty,' ϡα for 'thirty-one,' ϡβ for 'thirty-two,' ϡγ for 'thirty-three.' γ (unlike *3)* stood only for 'three'; no change of position could make it stand for 'thirty.' While such a rule must have precluded some misapprehensions that our beginners in arithmetic are liable to, it had the disadvantage that the letter ϡ is in no way related to γ as τριᾶκοντα 'thirty' is to τρία 'three.' (If these two letters happen to be shaped somewhat similarly, that is quite accidental; μ 'forty' looks nothing like δ 'four.')

[11]In Russian the ъ continued to be written until the spelling reform in the twentieth century, after the great revolution; but it had long ceased to be pronounced, like the final *-e* in English.

[12]Roman Jakobson, "Signe zéro," *Mélanges de linguistique offerts à Charles Bally* (Genève, 1939; repr. 1972), p. 143.

[13]One might concoct a sentence *In intellect Paul was Peter's superior, not Jesus',* to be written and therefore to be understood with the help of the apostrophe at the end of *Jesus'.*

[14]In the participles of the "strong" conjugation, such as *come, run, spun, won, hung, clung, flung, wrung, slung, slunk, shone, bound, found, ground, wound* [-au-], the morpheme [-ɨn] has been reduced to a zero allomorph by dissimilatory suppression after a post-vocalic nasal consonant in the base -- unlike *seen, blown, grown, known, thrown, drawn, sworn, torn, worn, fallen, given, shaken, forsaken, broken, spoken, stolen, woven, frozen.* When the participle is used as an attributive adjective in somewhat archaic expressions -- *my bounden duty, a sunken ship, a drunken man* -- the [-ɨn] survives. On the other hand, a few recent additions to the "strong" conjugation, *stick : stuck, dig : dug* (in former times also *sticked(e)* and exclusively *digged),* lack a nasal in their base but otherwise follow closely the model of *sting : stung, swing : swung.*

The loss of *-en* in *fought* (the participle of *fight)* appears to be due to the model of an important set of verbs in the "weak"

conjugation: *bought, brought, sought, thought, ought, wrought,* perhaps also *caught* and *taught.*

[15]Hans Marchand, *The Categories and Types of Present-day English Word-formation* (Wiesbaden, 1960), pp. 293-308 -- the chapter that he unfortunately calls "Derivation by a Zero-morpheme."

PLURALIZATION IN ZAPOTEC LANGUAGES*

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Introduction. The Zapotec language family of the state of Oaxaca in southern Mexico includes an estimated forty mutually unintelligible languages. There are many phonological, lexical and structural similarities which clearly bind them together as a single family within the larger Otomanguean stock (see Marlett 1985). But the differences in these areas are also notable.

Pluralization is an example of an aspect in which there is significant structural difference. In this paper we discuss the pluralization of noun phrases and third person pronouns. There are three "features" in which Zapotec languages differ: they either have a given feature or they do not.

#A A plural proclitic with nominals (including pronouns).

#B A prefix on the verb (to pluralize the subject).

#C Plural clitic floating (to post-verbal position).

We ignore here the matter of the 'optionality' of a plural marking. In some languages, such as Isthmus Zapotec, plural marking is fairly obligatory (except when a quantifier is present, when it is not possible); in many of these languages, however, plural marking is not at all obligatory or necessarily common.

The twenty-three languages we have considered display all of the eight possible combinations of these three features. (See the table on the following page.) For example, some languages have none of these features. One has all three of them.

In this paper we document these features in the Zapotec languages.

Type 1 (of the seven attested combinations of features) is represented by many of the twenty-three languages under consideration. The following languages are included in this group: Atepec, Choapan, Guevea de Humbolt, Guelavía, Isthmus, Lachixío, Mitla, Ocotlán, Santo Domingo Albarradas, Texmelucan, and Western Ixtlán. These represent a significant geographical and linguistic spread. This group has only feature #A; it marks plural only by a proclitic which occurs immediately before the

TABLE SHOWING ATTESTED COMBINATIONS

TYPE	LANGUAGE	Feature A NP PROCLITIC	Feature B VERBAL PREFIX	Feature C CLITIC FLOATING
1	IST, SDA, TEX, MIT, LAC, OCO, ATE, CHO, WI, GH, GL	YES	NO	NO
2	TAB	NO	YES	NO
3	YLG	NO	NO	YES
4	RIN	YES	YES	NO
5	RIN SUR	YES	YES	YES
6	CAJ, YTZ ZOO	NO	YES	YES
7	CHI	YES	NO	YES
8	AMA, MIA MIX, QUI	NO	NO	NO

AMA	Amatlán	LAC	Lachixío	SDA	S. D. Albarradas
ATE	Atepec	MIA	Miahuatlán	TAB	Tabaa
CAJ	Cajonos	MIT	Mitla	TEX	Texmelucan
CHI	Chichicapan	MIX	Mixtepec	WI	Western Ixtlán
CHO	Choapan	OCO	Ocotlán	YLG	Yalalag
GH	Guevea de Humboldt	QUI	Quioquitani	YTZ	Yatzachi
GL	Guelavía	RIN	Rincón	ZOO	Zoogocho
IST	Isthmus	RIN SUR	Rincón Sur		

head of the relevant noun phrase. (We write it here as a separate word.) The examples in this section are from Isthmus:

(1) a. yaga 'tree' **ka** yaga 'trees'
b. mani? 'animal' **ka** mani? 'animals'

Zapotec languages typically distinguish between clitic pronouns and free pronouns. Clitic pronouns are used, *inter alia*, for subjects, and we transcribe them below with hyphens preceding them. (They are not agreement affixes.) The plural morpheme simply occurs in front of a third person clitic pronoun to make it plural.

(2) a. b-yaba -be 's/he fell'
COMPL-fall 3hum

b. b-yaba **ka** -be 'they fell'
COMPL-fall PL 3hum

The usage of free pronouns varies from language to language. In many languages the free pronoun can be or must be used for (at least) objects. Free pronouns have the structure of inalienably possessed nouns: a stem followed by a clitic pronoun. The pluralizer precedes the clitic pronoun.

(3) b-i-di? -du **ka** -ni laa **ka** -be
COMPL-ThV-give -1plexc PL 3inan stem PL 3hum
'we gave them to them'

Type 2 is represented by only one language: Tabaa. It has only feature #B; pluralization is indicated only by a verbal prefix, for subjects.[1] This is illustrated in (4). (Pronouns are ambiguously singular or plural; this is true for the bound pronouns, as shown in (4), or the free pronouns. For example, the free pronoun lä? means 'he/she/they'.)

(4) a. je-le?e -nä? 's/he sees'
CONT-see 3resp

b. je-**le**-le?e -nä? 'they see'
CONT-PL-see 3resp

Type 3 is exemplified by one language, Yalalag, which is closely related to those languages of type 6. It has only feature #C: clitic floating. Of course, in order to have clitic floating, a language must have a plural clitic. But most of the languages which have clitic floating have a plural morpheme which occurs only with pronouns. Therefore we classify them as NOT having feature #A. This plural morpheme in Yalalag is seen in the examples in (5). These examples illustrate that in a large number of cases the plural proclitic is contiguous to, and presumably a sister constituent of, the pronoun which it is

modifying, much as the plural proclitic in type 1 languages.

(5) a. *Prepositional phrase*

preposition	nominal		
ke	ak -ba?	==> ke ak -ba?	'of them'
'of'	PL 3anim		

b. *Possessed Noun*

nominal	possessor nominal		
liž	ak -e?	==> liž ak -e?	'their home'
'home'	PL 3resp		

c. *Free Pronoun*

lle ak -e? 'they/them (3 resp)'
stem PL 3resp

d. *Clitic Pronoun*[2]

polisia ka? b-e?ś ak -e? to be?nne
police those COMPL-grab PL 3resp a person
'The police arrested a person'

In the following example the plural morpheme is not contiguous to the pronoun with which it is associated semantically. It appears that it has 'floated' away from the pronoun to a post-verbal position. Clitic floating is obligatory in all of the Zapotec languages (of our sample) which have it.

(6)

Verb	Sub	D. Obj.					
b-le?	-la	ak -ba?	==>	b-le?	ak	-la	___ -ba?
				COMPL-see	PL	1s	3anim
				'I saw them'			
				* ble?	-la	ak -ba?	

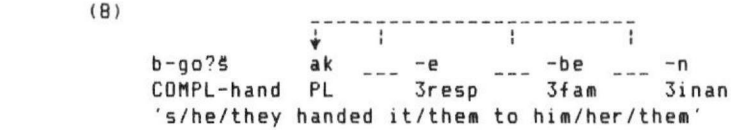
The next examples are ambiguous as to the source of the plural clitic since only one plural morpheme may occur following the verb.

(7)

b-go?ś	ak	-a	___	-be	___	-n
COMPL-hand	PL	1s		3fam		3inan

'I handed it/them to him/her/them'

(8)



If it is assumed that the plural morpheme is indeed a sister constituent of the pronoun at some level of analysis and that there is a rule positioning the plural post-verbally rather than pre-nominally, then it is also necessary to have a rule reducing a sequence of identical plural morphemes to one. Details of this analysis and alternatives are given in Marlett (to appear).

Type 4 pluralizes by means of a noun phrase proclitic and also with a verbal prefix. The one language which attests this type--Rincón--has different morphemes for the plural clitic used with pronouns and that used with nouns. (The morpheme used with nouns is etymologically the word for 'all'; but this quantifier has been generalized to a simple plural proclitic in Rincón, as in some other Otomanguean languages.) The verbal prefix occurs only if the subject is third person. In this language this verbal prefix may occur in lieu of or in addition to the plural proclitic (when the latter is before a subject). Example (9) shows the plural proclitic used before nouns, (10) that used before pronouns, and (11) the verbal prefix.

(9) yaga 'tree' **yugu?** yaga 'trees'

(10) a. ri-le?e -da? le **gaka** -nu 'I see them (f)'
CONT-see 1s stem PL 3f

b. ru-yu **gaka** -nu 'they (f) watch'
CONT-watch PL 3f

(11) a. gu-la?-ginaX **yugu?** yaga 'the trees fell'
COMPL-PL-fall PL tree

b. gu-la?-gu? -ä -ba? 'they (m) hit it'
COMPL-PL-hit 3m 3anim

c. tu?-yu **gaka** -nu 'they (f) watch'
CONT.PL-watch PL 3f /ru+la?/ > [tu?]

Type 5 is also represented by only one language, which is very closely related to Rincón: Rincón Sur. This language includes all three features. Clitic floating is one of the few ways in which this language (or dialect, perhaps) differs from Rincón.[3] It has a plural proclitic in noun phrases, it uses a verbal prefix to pluralize subjects and it also has clitic floating (when the plural morpheme precedes a pronoun). In most situations the Rincón Sur facts parallel those of Rincón and do not need exemplification here. The difference shows up in the

verb when a nonsubject pronoun is plural. The following restriction prevents some ambiguity in this language: a third person plural object must be realized as a free pronoun if the subject is third person plural.

(12) a. ri-le?e -dä? -nu 'he sees her'
CONT-see 3m 3f

b. ta?-le?e **gaka** -dä? -nu 'they (m) see her'
CONT.PL-see PL 3m 3f /r+la?/ > [ta?]

c. ri-le?e **gaka** -da? ___ -nu 'I see them (f)'
CONT-see PL 1s 3f

d. ri-le?e **gaka** -dä? ___ -nu 'he sees them (f)'
CONT-see PL 3m 3f

Type 6 is represented by three closely-related languages: Cajonos, Yatzachi, and Zoogocho. This type uses the verbal prefix and also has plural clitic floating, but only for nonsubjects. In the case of bitransitive verbs, with two pronoun clitics, the reference of the plural marker is frequently ambiguous. We use Yatzachi examples to illustrate. (The symbol "E" in these examples represents a shwa.)

(13) a. ɟ-ene -bo? 's/he hears'
CONT-hear 3fam

b. ɟ-se?-ene -bo? 'they hear'
CONT-PL-hear 3fam

c. ɟ-EsE?E-sed geyE? bidao?
CONT-PL-study five child
'five children are studying'

d. y-osež **ga?ak** -bo?o ___ -b
POT-untie PL 3fam 3anim
's/he is going to untie them'

e. gw-sa?-aklen **ga?ak** -e?e ___ -bo?
COMPL-PL-help PL 3resp 3fam
'they helped them'

f. b-nežXw **ga?ak** -bo?o ___ -ne?e ___ -b
COMPL-give PL 3fam 3resp 3anim
's/he gave it/them to him/her/them'

Type 7 is attested by one language--Chichicapan. This language does not use a verbal prefix to pluralize third person subjects, but it does use a plural morpheme in the noun phrase and it has clitic floating. In the following example the plural has floated from the object noun phrase to follow the verb.

(14) g-akane?e ra? -lu?h ___ lasa?a? -lu?h
POT-help PL 2s relative 2s
'you should help your relatives'

This is the only Zapotec language which (to our knowledge) has plural clitic floating from a something other than a pronoun.[4]

Type 8 has no markers for plural, either with nouns, pronouns, or verbs. This type is exemplified by four languages which are geographically and linguistically close --Mixtepec, Amatlán, Quioquitani, and Miahuatlán. In this respect these languages are similar to the geographically close Chatino languages.

Summary. We have shown that within the Zapotec language family there exist eight different combinations of three manners of indicating plural for third person. The exact historical relationship between these systems remains to be worked out. It is interesting to note, however, that the isoglosses which might be drawn based on the phonological shapes of the plural clitics will not be the same as the isoglosses which are drawn from the syntactic patterns.

Appendix 1: Comparison of morphemes

We present here the plural morphemes, grouping them by probable historical relationship. (In some cases there are phonologically conditioned allomorphs; we present here the basic form.) We use the plural morpheme which occurs before pronouns since this is the form that reconstructs for proto-Zapotec.

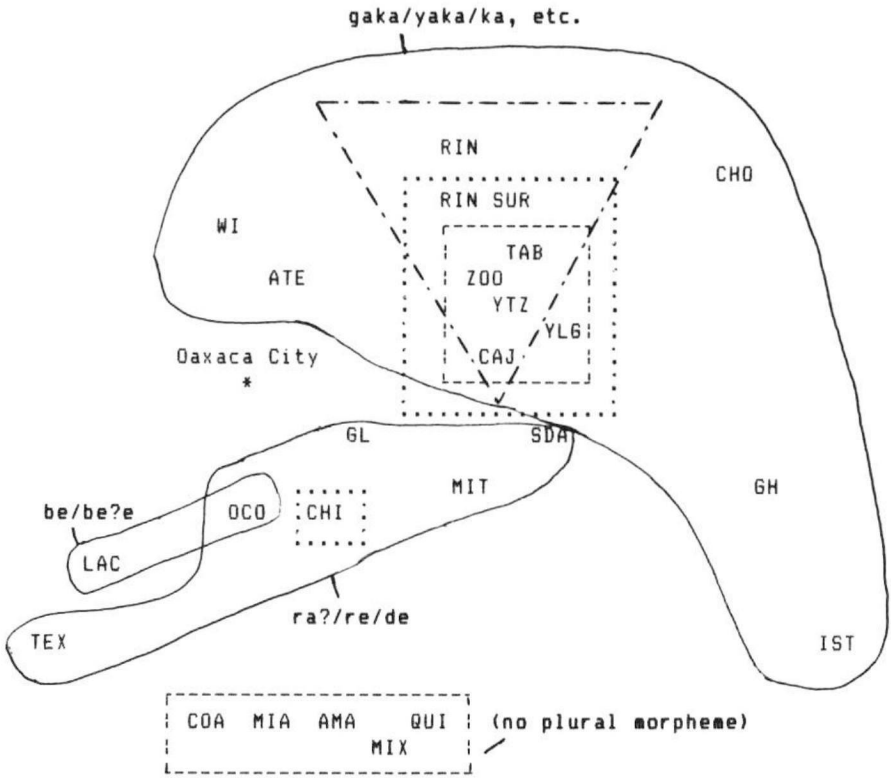
Plural proclitic

gaka	RIN, RIN SUR	ra?	CHI	be?e	LAC
ga?ak	YTZ	ra	OCO	be	OCO (subdialect)
gak	CAJ, ZOO	re	MIT, SDA		
ak	YLG	de	GL, TEX		
yaka	CHO				
yahk	GH				
ka	ATE, IST, WI				

Verbal prefix

la?-	RIN, RIN SUR	sV?-	CAJ, YTZ
le-	TAB	sV-	ZOO

Appendix 2: Map showing relative locations and isoglosses (syntactic features and allomorphy)



Without Feature A (plural proclitic): ---------
With Feature B (verbal prefix): -.-.-.-
With Feature C (clitic floating): .....

Notes

* This work was facilitated by a research position which Marlett had at the Instituto de Investigaciones Antropológicas, Universidad Nacional Autónoma de México during 1984-1985. Versions of this paper were presented at the Summer Institute of Linguistics in Mexico City, at the University of North Dakota, and at Trinity Western University. We appreciate the helpful comments and questions of various people in those audiences.

The following abbreviations are used:

anim	animal	inan	inanimate
COMPL	completive aspect	m	masculine
CONT	continuative aspect	pl,PL	plural
exc	exclusive	resp	respect
f	feminine	s	singular
hum	human	ThV	thematic vowel
1	first person	3	third person
2	second person		

Our information on the Zapotec languages was obtained primarily from the following sources: Amatlán - David Riggs; Atepec - Bartholomew 1983; Cajonos - Don Nellis; Chichicapan - Joseph Benton; Choapan - Larry and Rosemary Lyman; Guelavía - Ted Jones; Guevea de Humboldt - Donna Marks Kreutz; Isthmus - Pickett 1967; Lachixío - David Persons; Miahuatlán - David and Gerry Gutierrez; Mitla - Morris and Carol Stubblefield; Mixtepec - Roger Reeck; Ocotlán - Donald Olson; Quioquitani - Michael Ward; Rincón - Robert Earl; Rincón Sur - Robert Earl; Santo Domingo Albarradas - Wolfram Kreikebaum; Tabaa - Robert Earl; Texmelucan - Charles Speck; Western Ixtlán - Grace Thiessen; Yalalag - Ron Newberg; Yatzachi - Butler 1980; Zoogocho - Rebecca Long.

1. This language (and also the others in the Villa Alta district--Yatzachi, Zoogocho, and Yalalag--which do not have feature #A) uses a plural demonstrative in the noun phrase as a means of indicating plural. Apparently the usage of this plural demonstrative is such that the deictic nature of the morpheme is being lost.

ŝaga na? 'that tree' ŝaga ka? 'those trees'

This plural deictic is cognate with a postnominal deictic found in other Zapotec languages and not with the plural proclitic.

2. The fronting of a subject requires, in a number of Zapotec languages, the use of a clitic copy in the postverbal subject position.

3. The fact that Rincón and Rincón Sur have such similar grammars, one difference being the feature of clitic floating, makes it seem attractive to write their grammars in as similar a fashion as possible, differing only in the inclusion or noninclusion of a rule such as clitic floating.

4. Our data from Chichicapan is not as extensive as we would like it, especially in respect to the matter of a clitic floating away from a noun. Further research is necessary.

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"PARTICLES"

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Words like in, out, on, off, up, down, through and across have a curious status in descriptions of English. When followed by nominal objects (1-8), they are called Prepositions:

1. He walked in the door.
2. He walked out the door.
3. The dog jumped on the table.
4. The dog jumped off the table.
5. Jean climbed up the ladder.
6. Jean climbed down the ladder.
7. He walked through the room.
8. He walked across the yard.

Without an object (9-16), they are called Adverbs or Particles. The latter term is used especially when they seem to lack one of their usual meanings and form an indivisible, idiomatic unit with the preceding verb (17-24), a combination called the Phrasal Verb:

9.	He walked in.	17.	The soldiers fell in.
10.	He walked out.	18.	The store closed out.
11.	The dog jumped on.	19.	They lead him on.
12.	The dog jumped off.	20.	The plane took off.
13.	Jean climbed up.	21.	The girl spoke up.
14.	Jean climbed down.	22.	The wind died down.
15.	He walked through.	23.	Our plans fell through.
16.	He walked across.	24.	He put a point across.

My claim in this paper, supporting and extending the arguments of Emonds (1972) and Jackendoff (1973), is that these words are always prepositions; thus, in (9-24), they should be considered intransitive prepositions. When not followed by an object, these words have a prominent syntactic feature: they can occur either adjacent to the verb or after its direct object (25-26).

25. I put on my hat. 26. I put my hat on.

In agreement with the prevailing view among linguists, most transformationalists have taken the verb-adjacent position as basic, deriving the other

order by a transformation called Particle Shift. Thus, (25) is basic, and Particle Shift moves the particle after the object to get (26). This transformation needs several special conditions: it is obligatory when the object is an unstressed pronoun (27-28), and likely to be blocked when the noun phrase becomes complex (29-30).

27. *I put on it. 28. I put it on.
29. I put on the old gray tattered hat that Uncle Fred gave me.
30. *I put the old gray tattered hat that Uncle Fred gave me on.

Emonds, however, proposes exactly the reverse: the non-adjacent order is basic, and Particle Shift operates, with opposite conditions, to move the particle adjacent to the verb. Thus, (26) is basic, and Particle Shift moves the particle before the object to get (25). This solution implies that all prepositional phrases within the verb phrase, both transitive or intransitive, occur in the same basic syntactic position, after any direct object. Accepting this analysis, Jackendoff (1973,354) proposes the following PP-rule:

A. PP --> P (NP) (PP)

For anyone interested in capturing generalizations about syntax, Emonds' claim has a number of surprising virtues--surprising in that they have gone unacknowledged so long. If these words are always prepositions and if their basic syntactic position within the verb phrase is always the same, both word classes and syntax are simplified, in a way that accords directly with apparent form and structure. That is, these generalizations are not the result of some involved theoretical argument, built on a number of dubious other claims, but rather regularities drawn directly and consistently from what appears obvious. At fundamental issue here is methodological priority. While appearances are often deceiving, the best methodology is nevertheless one that tests first if apparent unities are real. Exhibiting a distrust of "surface structure" far older than Transformational Grammar, many scholars too easily embrace the possibility of rampant idiomaticity and polysemy and then argue for highly dubious regularities or else conclude that languages are largely hodge-podges.

What is also surprising, the prevailing view has no virtues at all. In addition to its spurious complications and distrust of surface structure, its

theoretical justification is merely a combination of Latin prescriptivism--prepositions always have objects in Latin, so English prepositions must have them too--and a overconfidence about meaning and how it is realized. The claim that certain V-P combinations are idiomatic has been assumed, asserted, exemplified and repeated, but it rests on untested intuitional judgments of meaning and has never been sufficiently challenged by an alternative perspective. Moreover, even if certain combinations are idiomatic, it must further be demonstrated that linguistic descriptions should require the parts of idioms to be adjacent: discontinuous idioms like to pull X's leg are currently permitted. As far as I can see, the only proven virtue of the prevailing view is its familiarity and institutionalization in dictionaries and linguistic theories.

One possible misunderstanding must be noted. As (A) shows, Emonds' proposal does not imply that with all intransitive prepositions an object has been "deleted" or understood. Sometimes, especially in elliptical discourse, an object may be understood; and often transitive and intransitive may be closely parallel, as I made them in (1-16). Similarly, intransitive verbs can also imply an understood object. But like many intransitive verbs, some intransitive prepositions simply stand by themselves. There is no mystery what they mean: precisely what they mean as "adverbs." A different part of speech is no more needed here with verbs; the "need" is merely the artifice of prescriptivism.

However, a complication in Emonds' view must be corrected: his reversed but equally arbitrary rule of Particle Movement. If this rule is part of a more general and motivated phenomenon, the whole argument can be strengthened. The necessary insight comes from a neglected source: Yngve's (1960) Depth Hypothesis. Although he gives only brief attention to V-P combinations, Yngve sees clearly the reason for their alternate syntactic orders; thus, my purpose here is to acknowledge and extend his prior discovery as well. Yngve claims that, because of limits on short-term memory, syntactic complexity must be concentrated later rather than earlier in sentences. Some proposed transformations exhibit this: they shift complex noun phrases "rightward" either partly (Extraposition) or completely (Heavy-NP Shift). Yngve proposes (p. 458) that the variant orders with "particles" come from this shifting of complex noun phrases. Thus, (26) is basic, and Heavy NP-Shift moves the object beyond the preposition to get (25).

Since studies of phrasal verbs generally assume verb-adjacency and account for variations from this perspective, it is important to appreciate the different requirements for Yngve's hypothesis. Assuming post-object position as basic (26), this hypothesis can fail in two ways: either if an non-heavy object occurs after the preposition, or if a highly complex object need not move. The set (27-30) provides the testing data. In (27) the unstressed pronoun CANNOT shift because it is no heavier than the preposition. In (30) the highly complex noun phrase MUST shift because it puts a strain on processing. These two "boundary" examples demonstrate what Yngve's hypothesis predicts, and they follow naturally as consequences. Between these two boundaries, since prepositions are typically short, it will be possible for a noun phrase either to stay in its basic position or shift later in the sentence; that is, when the object is neither too light nor too heavy, both orders can occur, unless other conditions impose additional requirements.

But there is a further requirement on Yngve's hypothesis. Because its claim encompasses more than prepositions, shifting of object noun phrases should occur generally, as long as the noun phrase is more complex than phrases which follow it. This also is confirmed: objects can occur after adjectives (31-33), adverbs (34) and prepositions with objects (35-40):

31. ...a family was ready to break open a watermelon. (Toni Morrison)
32. The detonation fatally crippled the Scorpion, causing it to sink to as depth that ultimately crushed its hull and tore loose its fin-shaped sail structure. (Ed Offley)
33. ...the beginning of a cultural distinction between man and world, a distinction which breaks apart the integrated complex that characterized a mythical world. (Larry Hatab)
34. Further, I have difficulty taking seriously the notion that most stars in the sky harbor advanced malevolent societies. (George Greenstein)
35. ...it would make a good mouthpiece, so he clambered down, picked it up, and cut out of it a mouthpiece for his horn. (Grimm's Fairy Tales)
36. He did not see in history a gratifying, steady climb... (Frithjof Bergmann)
37. He took from his hip pocket a large knife... (Carson McCullers)
38. Valerie got out, and took from her purse the sheet of St. Regis stationary with the Air Force telephone number. (Robert Ludlum)

39. ...who wants nothing so much as to rip to shreds the pretensions of the heros... (Joyce Carol Oates)
40. ...Adrian is to bear on his frail shoulders a tremendous symbolic burden... (Joyce Carol Oates)

Thus, neither the variant syntactic orders nor their explanation are limited merely to phrasal verbs.

In addition, with phrasal verbs there are also Extraposition (41-42) and Extraposition from NP (43-44):

41. I didn't make it up that John skipped town.
42. He gave the news out that Fred won a car.
43. He took the boy in who had lost his parents.
44. He saw the matter through that had caused him so much anxiety... (Yngve, p. 458)

Bolinger (1971,39f) observes that STRESSED pronouns CAN occur in final positions (his attested examples; my numbering):

45. The lady bade her take away the fool; therefore, I say take her away.--Sir, I bade them take away YOU.
46. I knew that the school board contemplated throwing out Spanish in order to throw out ME.
47. You may give up society without any great pang, but severe are the moritifications and pains you have if society gives up YOU.
48. Fancy taking on HER.

The conclusion I draw is that stessing the pronoun makes it heavy enough to shift, while leaving it unstressed does not. However, Bolinger, assuming basic verb-adjacency, concludes that (45-48) make the fixed position of unstressed pronouns unimportant. He lists (1971,55) the next five sentences (I add [53] and the pronoun variants) to illustrate various alternative stress patterns with a noun object, failing to note the predictable limits on pronouns:

49.	How can they put NIXON over?	... put HIM over?
50.	How can they put over NIXON?	... put over HIM?
51.	How can they put Nixon OVER?	... put him OVER?
52.	How can they put OVER Nixon?	*... put OVER him?
53.	How can they PUT Nixon over?	... PUT him over?
54.	How can they PUT over Nixon?	*... PUT over him?

To summarize thus far, the Emonds-Yngve solution accounts for the boundary conditions in a simple and motivated way. The prevailing view of particles and

basic verb-adjacency, with its attendant complexity of word classes and syntax, will have to present some impressive compensatory advantages to justify its convolutions. Yet, even if pardoned for this complexity, the verb-adjacent view still cannot account for the boundary condition of (27), except arbitrarily as in Particle Shift. Moreover, an analysis positing alternative orders as basic also fails this requirement; and, since syntactic sequence is "real time," a claim of alternative orders has no advantage on grounds of simplicity.

These other solutions would have to be clearly superior in dealing with the many complications that occur within the boundary conditions; yet, as I will now show in part, the Emonds-Yngve view fares at least as well. The essential requirement is a definition of "heaviness." Since heaviness is a matter of degree, we are also defining its opposite, "lightness": as we might suspect, prepositions are usually light. I propose that heaviness has three dimensions: Syntactic, Semantic, and Rhetorical. The measure of Syntactic heaviness is Complexity, realized as Length (in string) and Depth (in structure). The measure of Semantic heaviness is Content, realized as Specificity (in hyponymies) and Contrast (in antonymies). The measure of Rhetorical heaviness is Newsworthiness (Bolinger 1971,51), realized as Accent (focus) or Post-Accent (redundancy).

While problematic, Syntactic Complexity is at least fairly well known; the other two dimensions require more discussion here. As for Semantic Content, general words like thing or someone are less heavy than specific words like table or father, and they also have more contrastive antonyms. Bolinger has noted (1977,166) that the more specific travel sounds better than the more general went in the frame He _____ far; far is itself so general that it would usually be chosen to accompany a heavy verb, and went in this frame by its generality indicates that its information is unimportant. The most general words of all I have called PRIMARY WORDS (Ruhl 1975;1985): the and be are clear examples. I have argued that the verb take is a Primary Verb, with a single general meaning, not polysemic as dictionaries and linguistic theories make it. Take can appear "empty" in phrases like take a walk; this emptiness is a consequence of its generality and thus lack of contrast partners. However, when take occurs in other contexts--what I will call Domains--where more contrast partners are possible, then it seems more specific: The thief took the jewels.

The so-called "minor" word classes, referred to also as "grammatical" in contrast to "lexical," are in fact Primary Classes: articles, pronouns and prepositions are inherently non-specific. They are also "closed" classes: that is, they allow a limited number of contrast partners. Similarly, there are in the "major" classes various sub-classes which are closed: take is in a closed subclass of verbs. These sub-classes have been diffcult for linguists to define, because they escape the powers of conscious thought: while the closed contrasts of here-there and now-then can be distinguished, and the status of be-do-have gleaned in part from their role as auxiliaries, words like take and classes like prepositions have resisted analysis simply because their uses seem highly various and disconnected.

A major stumbling block has been a misleading heuristic: the belief that "concrete" senses are more basic than "abstract" senses; to make matters worse, this contrast is usually additionally defined as "literal" versus "metaphoric." This heuristic habit is even more entrenched than the aversion to recognizing intransitive prepositions. Thus, for prepositions the "directional" senses of (1-16) are considered basic, while the "aspectual" senses (Bolinger 1971,96ff) of (17-24) seem mysterious, arbitrary and thus idiomatic. Linguists typically note that the former group can freely substitute for each other, and thus can be considered separate words (adverbs); the latter group are usually non-substitutable and thus are considered to be merely "particles," part of the "phrasal verb."

If, however, we consider "aspectual" meanings basic, we can explain their apparent arbitrary nature: they are the meanings of highly general words, and their lack of contrast partners follows from their generality. Within specified domains like direction, however, they are interpreted more specifically, because they relate contrastively. This view takes seriously the special characteristrics of closed classes. If such a class is used over a number of domains, each with differing characteristics, then the words could keep consistent apparent meanings ONLY IF THE DOMAINS WERE ALL HOMOLOGOUS. As I note in Ruhl (1975), the "different" meaning of red in red hair is understandable if we note that there are fewer color contrasts to make, and so red assumes with hair a broader range, as it does in languages with fewer primary colors.

Likewise, prepositions: even in related domains like time and space, the semantic dimensions differ

and so prepositional roles in the two domains cannot be neatly and directly paired. What is needed is a full-scale study of closed classes that starts with the assumption of monosemy--that is, one that first investigates the possibility that identical form reflects some semantic unity. Works on "idioms" such as Makkai's (1972) bias toward open classes, using free substitutability as a determining factor and so implying that fully "literal" language is exclusively characterized by copious contrast possibilities. Not surprisingly, this short-sighted methodological demand leads to the conclusion that language is abundantly idiomatic, especially V-P combinations.

Consider now Rhetorical Heaviness, which involves the ongoing evaluation of information by a speaker concerning what is old or new information, familiar or strange, and easily inferrable or not; this is in part indicated by accent and position after accent. Bolinger assumes that neutral accent occurs on a final element of an expression, which automatically becomes the "new" information, with no implied status for other elements; but if the accent occurs BEFORE the final element, then what follows is specified as "old" or redundant. His following comments apply this perspective to (49-53). (Although he takes the particle to be part of the verb, his analysis is still compatible with my line of argument):

> By putting the particle at the end and accenting it, we recapture the power to make the verb the high point without explicitly degrading anything else. By putting it there and not accenting it, we are able to make the verb explicitly redundant. In addition, nothing is sacrificed. ...The first [49] occurs in a setting where acts of political maneuvering are familiar (<u>putting over</u> may or may not actually have been mentioned). The second and third [50-51] approach the political maneuver from outside: they could be spoken by someone broaching the whole question of politics, the difference being in the relative newsworthiness of the person or action. The fourth [52] treats Nixon as redundant. The last [53] is an instance of rectification--the accent displaced onto a syllable that would be meaningless if interpreted as highlighted in its own right implies "How can such things be?" "How can they be thinking of such a thing?"

According to my definitions of heaviness, we can say the following about Bolinger's sentences. Here, the preposition <u>over</u> is slightly heavy semantically,

with a faint directional sense; it has as contrast partners all the prepositions noted in (1-8). Nixon is highly specific, with numerous contrast partners, but not complex. Taking all heaviness into account, we can explain the full degree of variation shown in (49-53). When we accent any word, we make it rhetorically heavy; but given the specificity of Nixon, over is not heavy enough to block object movement even when accented (52)--although it could if the PP were more complex and specific: over on the country. In general, Nixon is heavy enough with respect to over that it CAN move regardless of the accent pattern, yet not sufficiently complex that it HAS to move.

Him as object changes the conditions. Pronouns are rhetorically less newsworthy and semantically general, with limited contrast partners; thus, the inherent heaviness of prepositions (though not great either) is sufficient to block movement unless the pronoun is accented (50). But even when accented (49), the pronoun does not have to move. Pronouns and prepositions are about equally light, so without accent the pronoun cannot change original position.

While discussing his Definite Noun Phrase Test (1971, 61), Bolinger also reveals the comparative strengths of Semantic and Rhetorical heaviness:

55. They took along a couple of old newspapers.
56. They took along the newspapers.
57. They took with them a couple of newspapers.
58. *They took with them the newspapers.

He notes (p. 64): "These examples show that an adverbial adjunct to a verb is not normally allowed to precede a simple definite object noun phrase [58]. The exceptions--the phrases that behave like simple verbs in this respect [56]--are defined as phrasal verbs." However, heaviness suggests another interpretation. The difference between (56) and (58) is the different complexity of the PP's; the difference between (57) and (58) is the different complexity of the objects. But if we simplify (57) to a newspaper, we still have the factor that Bolinger intended to isolate: why can an indefinite phrase move when a definite can't, given comparable complexity? While the definite is more specific because anaphoric, the indefinite is rhetorically heavier because its information is NEWER. This pair provides a minimalized comparison of specificity and newsworthiness, showing that (other things equal) the latter has more weight. Again, there is no need to create a new formal category like Phrasal Verb to explain the variation.

As Bolinger illustrates, in his discussion of (49-53), Heavy-NP shift can subtly alter meaning. When the V-P are adjacent, the action of the verb is emphasized; when they are separate, the effect indicated by the preposition is emphasized: thus, They made clear their intentions ('clarified'), but They made their intentions clear ('unmistakable') (p. 82). His point is well-taken, even if his glosses seem debatable. This is an effect I have had in mind when I argued against the COMPOSITIONAL ASSUMPTION (Ruhl 1977;1985). The meaning of an expression is not merely the sum total of the meanings of its words; one sign of this is that shifting the order of words (even under supposed meaning-preserving conditions) can produce the effects Bolinger has noted.

This variation in meaning throws in doubt the analytic strategies of scholars such as Fraser (1976) who use movement transformations to define or classify phrasal verbs. One such "test" involves fronting; since we get Down they sat but not *Down he broke (Bolinger 1971,116), the first down is considered an adverb, the second a particle. This reasoning seems to ignore the purpose of fronting, which is to make certain information prominent; obviously, very general information will not qualify. The first down, interpeted within the domain of directions, is eligible because it is more specific and thus heavier.

But fronting is also conditional on what is left behind. Consider the following:

59.	They traveled off.	Off they traveled.
60.	They ran off.	Off they ran.
61.	They went off.	Off they went.
62.	They took off.	*Off they took.

Data such as these are often presented to show that take off is an idiom; but all four expressions describe the same type of event, with off playing the same role, so the difference must be with take. An argument according to semantic heaviness would go as follows. The verb left behind in fronting must have enough specificity to indicate the intended meaning without the close presence of the preposition: travel easily qualifies. Contrary to usual polysemic treatments, I claim that run, go and take are all highly general, monosemic words; but their differences in meaning are reflected in their application to different domains. Run, go and take can all be applied to movement contexts, but while the meanings of run and go specify directly to movement, take requires the help of adjuncts. Because, FOR THIS PARTICULAR DOMAIN,

take is more dependent on context, the fronting of off is more problematic.

The semantic properties I am claiming here are not merely obscured by conclusions of idiomaticity; their discovery is actually foreclosed. Bolinger shows this in commenting on verb phrases where alternative orders are impossible (1971,114): "...the entire verb phrase is frozen. These are 'idioms.' They are worth exemplifying, but no more." These are some of his phrases, the first column with V-P adjacent, the second column separated:

63.	to put on the dog	68.	to keep one's hand in
64.	to take up arms	69.	to put one's foot down
65.	to let off steam	70.	to cry one's eyes out
66.	to choose up sides	71.	to talk his head off
67.	to shut up shop	72.	to keep one's shirt on

These phrases exhibit what Bolinger (1971,111ff) calls STEREOTYPING, which involves two phenomena, often co-occurent: (a) fixed word order and (b) unexpected meanings. These are the characteristics usually associated with idioms. It is important to note, however, that even if all these expressions--plus many more having the same properties--were definitively established as idioms, they would have no effect on the argument I am presenting. PRECISELY BECAUSE they are idioms, they are unrelatable to the rest of the grammar and thus irrelevant. Oddly, those who argue for verb-adjacency often seem to be using the supposedly "irregular" data of (63-67) to establish regularities. This practice could be justified only if all V-P sequences were idiomatic. That there are many idioms in English, I have no doubt. My claim, however, is that many V-P combinations are considered idiomatic because of poor theory and methodology. Although I cannot pursue this point at length, here are a few closing observations.

A thorough investigation of (63-72) would take seriously the properties of closed classes. Fixed word order may reflect relics (as kick the bucket) or institutionalization (salt and pepper), but it can also indicate limited choices available (perhaps only one) in the verb, the object, the preposition, or any combination; to put up with, for example, may require those three particular words because no other choices are available to convey the intended meaning. Only a thorough study of the possible monosemy of each word can supply an informed conclusion. Of course, some expressions aren't as fixed as advertised: Bolinger also lists to put on airs to parallel (63), and

Webster's Third International cites put a saintly manner on and also put it on 'exaggerate'--all of which suggest that (63) is stereotyped because of the unusual use of the dog. It is important to remember that Heavy-NP Shift is optional, up to a point; the apparently fixed patterns of (68-72) indicate that the object is less important. My intution, which I would want to fully test, is that the prepositions of (63-72) have heavier content than those of (63-67), and that the metaphoric status of the objects (not the whole phrases) makes them correspondingly weaker.

But the comments of the last paragraph are at best impressionistic, meant to indicate the lengthy and largely unnoticed task of semantic and rhetorical research that still lies ahead. My purpose in this paper has been only to argue for the Emonds-Yngve hypothesis, and I hope that my remarks have dealt with enough of the many relevant factors to make it seem at least as plausible, and hopefully more, than the prevailing prescriptivist view.

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VI

SEMANTICS

IDIOMS AND RULES

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In this paper, I should like to confine myself to several points concerning some grammatical operations given to reveal degrees of frozenness in idioms and their correlations on a more empirical basis than previously discussed.1)

1. Data

I have selected for the present purpose 261 'verb+noun' phrases such as kick the bucket (hereafter referred to as VN), and 173 'verb+noun+preposition' phrases such as take advantage of (hereafter referred to as VNP). I collected the possible items for the VN and VNP phrases from various dictionaries and from recent newspapers, periodicals, books, and actual recordings of spoken English. I decided to use all those that were listed in the dictionaries and others that occurred very frequently in other sources or were of theoretical interest.

2. Classification

The following is a classification of VN and VNP phrases on the basis of some properties of the nouns. Space limitations prevent me from giving all the examples:

(a) Abstract nouns

VN	VNP
beggar description	bear comparison with
carry conviction	call attention to
carry weight	dance attendance on
gain ground	do justice to
gain momentum	give credence to
lose ground	lay emphasis on
make haste	lose patience with
make headway	make mention of
make progress	make reference to
make sense	part company with
take action	pass judgment on
take advice	pay attention to
take care	put pressure on
take effect	take account of
take flight	take advantage of
take fright	take charge of
take occasion	take cognizance of
take offence	take control of
take precedence	take exception to

take thought	take notice of
take trouble	take pity on
take refuge	take possession of
take umbrage	take pride in

Some properties of this class of nouns are:
(1) Morphologically, many of them derive from their corresponding verbs as in description (= describe), conviction (=convince), action (= act), comparison (= compare).
(2) Because of their abstractness, they do not take a or the. But some idioms take the when the noun is modified as in take the trouble to do.
(3) Many of them take adjectives and/or quantifiers, and therefore, can passivise (to be discussed later):
The Government took swift action. ⇒ Swift action was taken by the Government.
You should take some notice of what he says. ⇒ Some notice should be taken of what he says.
(4) Those VNP idioms which take no modifier are more idiomatic and are often equivalent to single verbs such as give birth to = bear, part company with = separate

(b) Body nouns

VN	VNP
break one's back	close one's eyes to
break one's neck	get one's teeth into
burn one's fingers	lay one's hands on
chance one's arm	set one's face against
drag one's feet	shut one's ears to
follow one's nose	try one's hand at
hang one's head	turn one's back to
lose one's head	wash one's hands of
lose one's tongue	
rack one's brain(s)	
save one's neck	
save one's skin	
show one's face	
stretch one's legs	

Some properties of this class of nouns are:
(1) They cannot passivise.
(2) Most of them cannot take modifiers, though nouns in similar structures which are not body nouns sometimes take an adjective such as

break one's long silence
make one's initial debut
show one's true colours

(3) One's shows a certain amount of literalness in the noun, and one's nouns are less idiomatic than a/the nouns, which are less idiomatic than Ø nouns. For example:

most idiomatic	less idiomatic	least idiomatic
set foot on	set eyes on	set one's heart on
give ear to	lay hands on	lay one's hands on
lose face	pull a face	show one's face

(c) Countable nouns without a

VN	VNP
break step	add fuel to
change colour	get wind of
follow suit	give chase to
gather way	give place to
keep house	give rise to
lose face	give scope for
lose heart	give vent to
pass muster	give way to
play truant	keep track of
run riot	keep vigil on
save face	lay claim to
take heart	lay siege to
take root	lose sight of
take shape	lose touch with
take wing	make game of
turn turtle	make room for
	make way for
	pay tribute to
	set fire to
	set foot on
	take issue with
	take leave of

Some properties of this class of nouns are:

(1) The VN idioms without a are highly idiomatic syntactically and semantically. None of the transformations (to be discussed later) is applicable to the idioms of this class.

(2) The VNP idioms of this class are, on the contrary, less idiomatic than the VN idioms. Many of them admit of modification, and therefore, of the passivisation of N^2 as subject, when the N^2 is accompanied by a modifier, and the passivisation of N^3 as subject when it is not accompanied by any modifier (two types of passivisation will be discussed later).

3. Analysis

I asked three native speakers of English, university graduates aged between 27 and 37, to check on each sentence containing transformed idioms. I frequently asked more people to check. Their reactions were recorded as three-term notations: '+' indicates acceptance, '-' rejection, and '?' various responses. '+' was registered where all three informants agreed on the item in question. '-' was registered where they all disagreed. '?' was registered where at least one of them differed from the others (as regards various problems concerning linguistic acceptability, see Greenbaum, S. and Quirk, R. (1970)).

Matrices and parameters are used to carry out the grammatical operations. By parameters I mean all the grammatical operations which will enable me to detect the variability, or the capacity for various transformations, that each idiom has. For instance, parameter 1 to hold water asks the informants whether the resulting transformed idiom is well-formed, i.e. whether they accept it completely, hesitantly, or reject it utterly; I can thereby deduce the possibility for the indefinite article modification which that idiom has as a covert characteristic. The following are sets of parameters for the VN and VNP idioms:

for the VN idioms

1) Indefinite article attachment ... whether or not the indefinite article a can be attached to the following noun
2) Number contrast ... whether or not the noun can be singularised or pluralised
3) Definite article attachment ... whether or not the definite article the can be attached to the following noun
4) Deictics attachment ... whether or not the deictics this (these) and that (those) can be attached to the following noun
5) Adjective attachment ... whether or not an adjective can modify the noun
6) Quantifier attachment ... whether or not such quantifiers as little, much and some can modify the noun
7) Nominalisation ... eg. Sam's kicking the bucket came as a great surprise.2)
8) Passivisation ... eg. *The bucket was kicked by Sam.

for the VNP idioms

1) Indefinite article attachment
2) Number contrast
3) Definite article attachment
4) Deictics attachment
5) Adjective attachment
6) Quantifier attachment
7) Preposition deletion ... whether or not the preposition can be deleted, as in take advantage of ⇒ take advantage
8) Preposition substitution ... whether or not the preposition can be replaced by another preposition, as in make mention of ⇒ make mention about
9) Passivisation of N^2 as subject ... Advantage was taken of John.
10) Passivisation of N^3 as subject ... John was taken advantage of.

Parameters 1) and 2) explore the possibility of number contrast, i.e. singularity and plurality. Parameteters 3), 4), 5) and 6) investigate the possibility of the premodification of N; the former two belong to the determiner class, and the latter two belong to the modifier class. Parameters 7) and 8) concern prepositions. Parameters 9) and 10) involve two types of passivisation.3)

In addition to the above tests, Iused other three transformations: relativisation, tough movement and topicalisation. These three transformations have been utilised most frequently by others (Fraser (1970), Newmeyer (1972, 1974), and Ross (1974)).

The following tables display examples in which the above tests and the transformations have been applied (the numbers below correspond to the above tests). The second table is so rearranged that the interrelations between the tests and the transformations are displayed more clearly:

VN

	1)	2)	3)	4)	5)	6)	7)	8)	rel.	tough.	top.
take place	-	-	-	-	-	-	-	-	-	-	-
change hands	-	-	-	-	-	-	?	-	-	-	-
save appearances	-	-	-	-	-	?	+	+	+	?	?
ring the changes	-	-	+	-	?	-	+	+	+	-	-
make headway	-	-	-	-	+	+	+	+	+	+	+

VNP

	6)	rel.	9)	5)	1)	7)	top.	tough.	10)	4)	2)	3)	8)
try conclusions with	-	-	-	-	-	-	-	-	-	-	-	-	-
give rise to	-	-	-	-	-	-	-	-	?	-	-	-	-
get wind of	+	-	-	-	-	-	-	-	-	-	-	-	-
find fault with	+	+	+	?	-	-	-	?	-	-	-	-	-
take pride in	+	+	+	+	+	-	-	-	-	-	-	-	-
take advantage of	+	+	+	+	-	+	?	-	+	-	-	-	-
play a role in	+	+	+	+	+	+	+	+	-	+	?	?	-

In the case of the VN idioms, those that allow no article, no adjective and no passivisation such as change hands, lose face and take place show high degrees of idiomaticity.

In the case of the VNP idioms, those that allow no article, no adjective and no 9) type of passive such as get wind of, give rise to and try conclusions with are highly idiomatic.

On the other hand, those VN and VNP idioms that allow almost all tests and transformations such as make a difference, take an oath, make a fuss of and put an end to are not so highly idiomatic.

The difficulties with informant tests are tremendous. In spite of the techniques being developed in several quarters (for example, Quirk, R. and Svartvik, J. (1966)), it hardly seems possible to get purely objective and unanimous results out of them. The more informants there are, the more confusion they are likely to produce. A large number of informants is a double-edged sword in tests of idiomaticity.

4. Conclusions

From the above discussions which are not sufficient because of space limitations, I can point out the following:

(1) There is a close relationship between modification and passivisation.

(2) Those idioms which can take modifiers and/or passivise can be relativised.
(3) Tough movement and topicalisation are not relevant in the sense that these transformations have no interrelation with other tests and that they do not particularly reveal the properties of idioms.
(4) In semantic terms, body nouns show higher degrees of idiomaticity according as their senses move away from their literal senses.
(5) A VN or VNP idiom is more idiomatic if it is used with the loss of its expected features. That is, when an idiom with an abstract noun is used with a or in the plural, or when an idiom with a countable noun is used without a and in the singular, it is more idiomatic than otherwise. Similarly, an idiom is more idiomatic without them than with them.

Notes

1) I am grateful to Professor Sidney Greenbaum for reading and commenting on an earlier version of the draft.
2) The nominalisation test used here includes Fraser's action nominalisation and gerundive nominalisation. Those idioms which undergo gerundive nominalisation can undergo action nominalisation, but not vice versa. My informant tests show that the idioms taken as my corpus are all negative to action nominalisation. My nominalisation test, therefore, equals Fraser's gerundive nominalisation (in subject position). The distinction between 'human' and 'non-human' subjects is certainly important. Some idioms such as bear fruit, hang fire and take place take non-human subjects, and this is in conflict with nominalisation in that the gerundive marker is usually possible with a human subject.
   Cf.
   The meeting taking place was very unexpected.
   ? The meeting's taking place was very unexpected.
3) It is unclear to me why Fraser (1970) does not take account of noun features. His transformations are all concerned with verbs.

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"WOULD" AS A HABITUAL PAST MARKER IN ENGLISH

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Until one year ago, when I started teaching composition to American freshmen, I had been teaching English as a second language (ESL). As is common practice, ESL teachers and texts tend to present English grammar in the most simplistic terms and generally devoid of discursive rules. Last year, as I started reading narrative papers written by my American students, a use of "would" to mark habitual past caught my eye. I noted that its occurrence was infrequent but coincident in contexts with the more common simple past or "used to." My curiosity to describe these writers' choice of "would" stemmed from two sources: First, I became guiltily aware that I had taught my international students that only the simple past is used to describe habitual past actions. Second, I noted some instances of "would" that simply did not ring true to my own intuitions and personal use.

As anyone who studies aspect knows, describing the mechanisms and semantics of various aspect forms is frustrating and sometimes elusive. My investigation of "would" proved no different. As I surveyed the literature, I found claims about the difference between "would" vs. "used to," but which my data do not bear out, as I will demonstrate. More frustrating was that I could not find any discussion as to why and when a speaker/writer chooses "would" over the other forms in discourse.

As I set out to describe the use of "would," I began to collect instances from my students' writing-- the formal essays containing personal examples, impromptu reminiscent paragraphs and journal entries. The students were enrolled in my freshman and intermediate (mostly juniors and seniors) writing classes. I supplemented these data with examples from television news interviews, newspaper editorials and conversations with friends and colleagues. I made no attempt to account for social or regional possibilities; most of the speakers and writers hail from the Illinois-Missouri region.

Joos (1964) calls the past habitual aspect the "generic aspect," used for characterizing events that are adequately characteristic. "Used to" is employed to match characteristic events confined to a certain past era; "would" is employed to match single events to separate occasions as when a scene is a sample of the whole. Such a distinction seems to explain the following:

(1a) "I used to keep one [a diary] when I was younger."

The past era in this sentence is some time when the writer was a girl and her typical behavior was to write in her diary. In a sentence in which "used to" is the required form, "would" cannot be

substituted. To do so would generate an ungrammatical sentence, as in (1b):

(1b) * "I would keep one when I was younger."

But in one paper, I found a sentence clearly referring to a past era in which the student wrote "would" as in (2):

(2) "There was a time when I would go home crying because I lost a friend."

According to Joos, "used to" would be the preferred usage above.

In other instances, I discovered sentences containing two possible interpretations: the dominant time refers to a past era or to a sample of the writer's interactions in that setting, as in examples (3) and (4) below:

(3) "I met a real nice guy [last year]. We'd always study together at school and he would invite me to parties given by the fraternity he is in."

(4) "For many years, I would call the limousine service several times a year requesting that I be picked up at the Holiday Inn to go to the airport."

In each of these examples, "used to" seems to be possible as well because each contains a generalized time referent--"last year" in (3)and "for many years" in (4). But the "would" seems to stem from the sample suggested in "study" and "party" in (3) and "several times a year" in (4).

I also collected some examples in which the use of "would" adheres to Joos' distinction. Many of these appear in complex sentences containing adverbial clauses. My first hypothesis was to modify Joos' concept and postulate that "would" will appear in the main clause and the adverbial which establishes the time reference will bear the simple past tense. This hypothesis is supported in the following examples (5-9):

(5) "He would hold on to me when I was scared or upset."

(6) "When I was little, whenever I needed something fixed, I would take it to my grandfather."

(7) "So every time I wrote an essay, I would get a 'C' on it."

(8) "Then when he started speaking again, he would talk about something totally different."

(9) "No matter how hard I worked on a paper, she would say, 'Now, Tom, you can do better than this.'"

As each of the above examples shows, the adverbial is signalled by a time marker that suggests an "each time" meaning. But my hypothesis failed to explain why students wrote the following (10-11):

(10) "When I would write a sentence, I was not always positive about there being a subject, verb, adj, etc."

(11) "No matter how many times we would revise and recopy, it always came back."

In these two cases, the adverbial clause contained the "would" and the main clause, the simple past marker. These two examples presented contradicting evidence for my rule. In fact (9) and (11) provided such a clear contrastive environment, my hypothesis had to be revised accordingly. I posited that if the main clause contained "always," its verb would be simple past and the "would"

would occur in the adverbial. But my new rule could not account for (12) below:

(12) "When I used to stay with my grandfather for the weekend, he would always take me out on Saturday night to get a shake at Dog'n'Suds."

My rule could not explain why the "used to" appears in the adverbial and the "would" in the main clause which also contains my marker "always."

Other explanations for the difference between "would" and "used to" fare no better under analysis. Visser (1969) suggests that "used to" expresses states and actions, while "would" expresses actions only. An extension of his distinction is that simple past and "used to" should be synonymous in all contexts, as evidenced in (13) and (14):

(13) "When I was younger, I always thought my mother was a genius."

(14) "I know that I used to think that a candy bar was just as good for me as fruit is, but now I know better."

In both of these, the verb "think" is the state; thus, "would" cannot be substituted. But the state vs. action distinction does not explain why the next student wrote (15):

(15) "When I was feeling down, she would know."

Clearly, "know" is a stative verb similar to "think," yet the "would" does not fit Visser's analysis.

Palmer (1975) has suggested that "would" is normally iterative and "used to" refers only to simple past actions. In the example just cited (15), this could well explain why "would" does occur: "know" cannot be a simple past action. It may well explain examples (2-11). However, Palmer's distinction blurs in the following, especially since "used to" occurs in the adverb clause.

(16) "When we used to go down to our cabin, we would all ride and ski all day long."

As I have demonstrated so far, the extant semantic/grammatical distinctions to explain the use of "would" vs. "used to" are not sufficient to explain the various data available. But a concept offered by Palmer (1979) is close. He claims that "would" is subject-oriented, used to describe behavior typical of the grammatical subject, and "used to" is not. This distinction may explain (17-20) below:

(17) "The last time we went, she was the life of the party. She would get up in the morning and do the 20 Minute Workout just to entertain us."

(18) "I was misfortuned [sic] with a less competent teacher. This less competent teacher would give topics that were of no importance to me."

(19) "We had a lot of fun. We would play practical jokes on each other. We would have late night bull sessions."

(20) "I tested my mother's patience. I would do things I was not supposed to."

Yet, native speakers readily accept "used to" in (17-20) as synonymous with "would."

So, although Palmer's subject-oriented claim does not pass intuition tests, it is a usable notion if it is redefined in discourse terms rather than purely grammatical terms. If we look again at examples (17-20), we can see that I have recorded more discourse context than in the previously cited examples. In each case, we see that a general characterization of behaviors is set up in the first statement in the simple past. The subsequent utterances add specific details to the first statement and all contain "would." This explanation fits (17-20) above and the following examples as well, (21 & 22):

(21) "It [the cafeteria food] wasn't as bad as it was made out to be, but it could have been better. Once in a while, we would get syrup that immediately hardened on our french toast."

(22) "The job was extremely exhausting. I would work from 5p.m. to 1 a.m. on my feet."

In (21) the second sentence offers an example of how the cafeteria food was sometimes bad. In (22) the second sentence gives evidence of how grueling the job was.

The data would suggest that grammatical/semantic distinctions do not accurately explain a writer/speaker's choice of "would" vs. "used to" in habitual past utterances. My hypothesis is that a topic-comment mechanism seems to be in operation. The speaker makes a general statement which characterizes the topic to be further discussed; subsequent sentences are then specific commentary on that topic. The following extract illustrates my point:

"The instructor, who was hired in, she was very hard to understand. She would have the class write an essay during class time. The next day, she would hand the essays back to the students. After this, she would proceed to telling the class how disappointed she was in the essays. She would then write our most common mistakes on the blackboard."

After the initial sentence, which interestingly contains another kind of topic/comment structure, the student then writes four supporting sentences using "would."

Even in cases where the topical relationship between the first sentence and subsequent sentences is less direct, the rule seems to hold for a preference of "would" in the comment statements, as in (23-25):

(23) "So writing was never really push[sic] in my classes. We would do grammar and read stories."

(24) "I went to a small school in Illinois, in which I knew just about everyone. Somehow it always seemed like someone would help write my paper."

(25) "I was never really inspired to write anything. There would be various essay writing contests that some people entered, but I was never interested."

It should be easy to see how in each the second statement offers "proof" of the characterization the writer has made. In (23), the writer shows the tasks they did instead of writing. In (24), the writer expands the notion of closeness and familiarity associated

with the small-school experience. And in (25), the second sentence illustrates one of the sources of inspiration that did not work for him.

As we have seen, all the grammatical/semantic explanations discussed in this paper are inadequate for explaining the distinction between "would" and "used to." I have demonstrated that analyzing the data according to these explanations does not account for perceived synonymity and for the violations of the alleged distinctions. What has emerged from the data is that a discourse rule like topic/comment dictates the selection of "would" in narratives. It is unfortunate that the following two "bizarre" samples were collected in the early stages of my study, when I was looking only at grammatical/semantic distinctions. Because they occurred in speech, I only recorded the utterance and not the topical context:

(26) "I remembered how things would be back then."

(27) "With my first baby, I would have a rough beard."

Surely, I missed some important data to explain these uses of "would" where my intuition quickly corrects (26 & 27) to either a simple past or "used to" to make them more grammatical and acceptable. Further research should validate my new hypothesis explaining writer/speakers' choice of "would" over "used to" in discourse, even in such cases as (26 & 27) above.

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ALMOST AND NEARLY
DYNAMIC AND STATIC MEANING

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1 This paper has two purposes. It will show that, rather than being a matter of taste or style, the selection of either word is determined by factors that are usually clearly manifested in the context. Second, it will demonstrate that almost and nearly symbolize two forces that constitute essential properties of language.

2 In order to formulate a hypothesis as to the difference between the two "synonyms" we turn our attention to the minimal pair made up of examples (1) and (2) (see the collection of examples at the end of the paper). What we observe first is that (2) contains a detailed description of an act that is stated to be almost impossible, whereas in (1), there is no such contextual basis. This difference is connected with a difference in the creation of the two artistic performances described in (1) and (2). (1) describes a circus act, and such an act is devised with a view to striking the spectators as being an act that they previously thought was impossible. This effect is achieved through a careful calculation as to what act comes as close as possible to what actually is impossible while keeping a safe distance to what is actually impossible. The devisor of such an act as it were emphasizes the nearness to what has proved to be 'impossible'. This is a fact of which the spectators, while watching the slick performance of the act in amazement, are fully aware. A composer of music, on the other hand, is too absorbed with his creative act to be concerned with whether his composition can be easily performed or not. Such a question arises only as an attempt to perform the piece of music is being made. In example (2), the encoder is so impressed with the performance that he feels that something that is actually impossible is miraculously being carried out. The judgment 'impossible' stems entirely from the observer's private reflection, i. e. he decides to call what he is witnessing 'impossible'. The spectator in (1) concludes: "what I am seeing comes close to 'impossible'", while in (2), he decides: "what I am hearing is so fantastic that I call it 'impossible'". Thus, in the latter formula the notion 'fantastic' is given support in a creative "call"-act, whereas in the former formula a factual statement is made.

3.1 In section II a), almost seems to function as a support for a concept formulated earlier in the context just as in our analysis of (2). In (3), the "live" character of the performance is in focus, in (4), almost always concretizes the painter's obsession, noted in the preceding context, and in (5), haunted is focalized. In (6), almost always confirms that heroes are created at a remarkable speed, and in (7), almost always zooms in on the irritation Breasted feels, merely implied in the preceding context.

Similarly, in (8). a lurking suspicion as to the uniqueness of the plight of the described person, who is neither primitive nor young, is confirmed. Just as in (4), almost always constitutes in (9) a concretization of an abstract argument, which is thus strengthened.

3.2 The concept 'nearness' presupposes that the text contains a clearly identifiable entity serving as an object of comparison for the entity in focus. Thus, in "The house lies near the street", street is an identifiable entity to which 'nearness' is established. The noun phrases functioning as subjects in the examples in section II b) have modifiers that limit the group denoted by the noun, making the entity consituted by that group easily identifiable.For example in (10), the modifying relative clause limits the group of "engineers" to an identifiable entity, to which the entity in focus, "the engineers who enter management and who are opening the door...", comes very near. The same limiting function is performed by the clause "one knows" in example (11). Such and these in (12) and (13), which refer back to properties that have such a function, are not likely to cooccur with almost always.

4.1 Almost in section III a) lends support to a focalized word, just as it does in the section discussed above. In (14), almost every gives permeate the support it seems to need in view of the fact that the subsequent context states that reading is a highly important skill at school, and in (15), almost every confirms the superiority mentioned in the preceding context. Almost every in (16) underscores how difficult it is to avoid jargon, "work its way" suggesting a dynamic force that is attempting to prevent avoidance. Examples (17), (18) and (19) are introduced by an abstract presentation of an argument, followed by a concretizing elaboration, of which almost every is an essential ingredient (cf. examples (4) and (9)). The supportive function of almost is as a rule linked with an implied attitudinal component, as in (20), where almost carries the suggestion that "read a sinister purpose" is a remarkable fact. Likewise, almost in (21) attaches an attitudinal component to the fact that so many Americans have some emotional feeling about Sam Spade.In this section there are two indications that almost + head has a secondary status. First, in (14), permeate implies totality, thus making almost every redundant.The attitudinal component present in this example calls for almost every being added as a concretizigg support for this verb. Second, save one in (22) seems to suggest that almost does not limit the validity of every at all.We must assume here that the basis of the surface structure is "every respect save one, i. e. almost every respect", implying that almost is added as an afterthought in support of the preceding noun phrase. However, as the surface structure indicates, almost at the same time justifies the use of every, although this term is not quite appropriate in a logical sense.

4.2 In section III b), the noun phrases containing nearly have

all limiting modifiers, thus making it possible for the concept 'nearness' to operate. This is merely implicit in (27), where the scenes referred to constitute a clearly identifiable group. It will be seen that there is such a modifier in (20) as well, but here the attitudinal element that is naturally attached to sinister overrides this factor so that it exerts the dominant influence on the encoding process. A similar dominance is decisive in (31) as well, where almost is selected because the contrast between "work single-handed" and "mechanized" calls forth an attitudinal component.

5.1 As already noted, almost in (31) focalizes the contrast that is described in that example. The other examples in section IV a) contain focalized words or phrases, important ((28)), a source of pleasure ((29)), and broad (responsibilities) ((30)).

5.2 As can be seen, the examples in section IV b) contain limiting modifiers. This is not explicitly the case with examples (49), (50), and (51); here, stylistic factors have probably played the dominant role in the encoding process: (50) and (51) have a scientific flavor and are, consequently, characterized by a striving for precision, with a concomitant avoidance of attitudinal elements. In (49), "smashed at the bloodstained face" creates a peculiar detached and factual impression, as if the one doing the "smashing" were performing some kind of routine work.

6.1 Having come this far in the analysis we would expect almost to be well-nigh impossible in collocation with numerals, since a numeral of course constitutes a clearly identifiable entity. Nearly dominates in this category, but the large number of examples with almost testifies to the power of attitudinal elements to invalidate the influence exerted by a clearly established entity in the encoding process. The contexts in the examples in section V a) clearly indicate the presence of an attitudinal element. Thus, for example, in (56) and (57), an implicit feeling of awe at the length of time involved probably determines the choice of almost. In many of the recorded examples one particular word is the bearer of the attitudinal factor that releases the use of almost; this word is underlined. In (62), almost serves an argumentative purpose in that it directs the attention to the length of time during which dictators have come and gone while the USA has remained free. In (69), (70), and (71), almost functions as a concretizing support for an introductory abstract presentation of an argument (cf. examples (4), (9), (16), (17), and (19)).

6.2 In several of the examples in section V b), there are words in the contexts telling us that the stated numeral is merely a fact that is there to be noted: record ((72)), reveal ((73)), become aware ((74)), and value ((75)). In other examples, the sections of the text in which nearly occurs have a parenthetical status (examples (76) through (80)). Furthermore, in several of these examples,

the number stated is a known fact (as in (76)), which contributes to the number being an easily identifiable identity. The same factor is probably decisive in (99), where nearly is used in spite of the drastic contrast described there. Since the encoder is aware of the stated number being a well-known fact, he realizes that no persuasion is needed, and so he selects nearly. What is generally characteristic of nearly is that it occurs in contexts indicating that we are dealing with sober, cool calculations without application of an attitude, and this is amply exemplified in the remaining examples in this section. To determine whether a particular example shows traces of an attitudinal component or not is sometimes a highly subtle affair, as is obvious from (52) and (102), which deal with similar situations. However, the staccato-like style in (52) is suggestive of annoyance, and irritation at a missed lunch is implied. By contrast, the remark on the weather in (102) is neutral in nature, thus affording an appropriate setting for nearly.

7.1 The heads of almost in the examples in section VI a) express inexact subjective evaluations except perhaps (106), where a calculable fact is stated. But here it is implied that equality between the sexes in school attentance is a remarkable fact. We find further evidence of secondary status for almost in (104), where the material in the concluding relative clause constitutes the contextual basis for dimly remembered.

7.2 The heads of nearly in the examples in section VI b) all express known entities. The head in (112) is an understatement, which is typical of nearly, as we shall see. In (113), nearly is probably selected because it is felt that the pleasantness of "I love you" is a commonly recognized fact. Alternatively, the positive implication here may be responsible for the selection of nearly (see below).

8 It will be obvious from my claim as to the secondary status of almost that I am claiming that almost marks further processing of material already lexicalized. This is manifested by the fact that almost very often is preceded by a comma, as in most examples in section VII. Such a graphic device is here a sign that the preceding material is retraced because the encoder is struck by some additional conspicuous feature in a perception that he has already realized in words. Thus, in (114), for example, the utterance referred to in the when-clause is retraced because the encoder/perceiver wants to communicate what he perceives to be the significance of the utterance. A creative linguistic act of this type of elaboration occurs on another level than acts producing normal speech as it were, and it seems to be the essential function of almost to mark such an act. Several features in the examples with almost point in this direction. Thus, the progressive, as used in (114) and (115) has a typical interpretative function (cf. "If I do this,I will be interfering with your plans"). A retracement of lexicalized material for further refined communication is typically marked by as (cf. "As he spoke, he sounded angry"), and in VII, the material "to the left" of almost can often be placed in as-clauses. The as-

clause can merely mark the progress of an act forming a frame for a characterization, as in (116), (117), and (118) ("As Stykia studied the captain, he almost broke..." /(117)/). Alternatively, it can specify features containing the germ of a more exact description, as in (119): "shudder with" was in this particular situation a symptom of a triumphant feeling. Since a retracement is the basis of a creative act of a "higher order" as it were, that is an act through which the encoder interferes with language material that presents itself more or less "automatically", we would expect to find in an as-clause and its neighborhood evidence for the presence of the one performing the act. Actually, there is such evidence in (120), where saw, indicating a perceptual act, dominates over laugh. Further evidence is provided by the fact that the verb in the corresponding main clause of an as-clause most often is a verb indicating a perception, such as see, hear, realize etc. (see Bäcklund, forthcoming 2). The purpose of such an interference with the normal flow of speech on the part of the creative mind is of course to heighten the communicative efficiency. Such attempts are obviously made in examples (121) through (141) and in (144), where a primary lexicalization is "improved" as it were by means of a more concrete secondary lexicalization.

8.1 Seem, like almost, is involved with linguistic creativity of "a higher order" (see Bäcklund, forthcoming 1), and these two words are similar in semantic function, as is evidenced by their collocations. Seem and almost collocate significantly with the progressive (see (114) and (115)), with as if and like (see (247) through (250)),and with adj/adv + as if (see (140) and (141)). Also, seem and almost collocate with each other, as in (142) and (143) and section XVI. Seem collocates significantly with as-clauses, which is a sure indication that it represents retracements of perceptions or primary lexicalizations which are considered worthy of being lexicalized or relexicalized. The capacity of both seem and almost to indicate dynamic processes in language can be seen most clearly in examples (147) and (318). Example (147) shows how an interpretative "philosophical" mind interferes with the normal flow of linguistic production, and the purpose of such an interference is to give pragmatic credibility to a specific word. Almost achieves this by attaching an as if-element to infinitely, thus marking the necessary approximative character of language. This function is even more obvious in (318). In Bäcklund forthcoming 1, I am claiming that appear, when it is used as a "synonym" of seem, is based on a primary perception or appearance. Thus, the underlying appearance for "He appears to be happy", is made up of signs of happiness, such as smiles, relaxed body etc. In processing this basic appearance in order to conceptualize these signs, the encoder reaches a point at which he produces happy: it is as if he can actually see happiness, which thus as if appears.The switch from "smiles etc. appear" to "happiness as if appears" is marked by seem: "it seems as if happiness as if appears". Miss Sutherland in (318) is an opera singer performing on stage. Of course, every spectator knows that she appears as another person. But almost calls forth AS IF appear and signifies the encoder's personal impression that the actress is performing so well that she suddenly seems to adopt another identity. In this secondary as if-appearance, much stronger focus is directed

on the behavior of Miss Sutherland: all of her behavior arouses fascination, and most of it coincides with the behavior of a completely different person. Most corresponds with as if in the secondary appearance, i.e. most embodies the concession that this appearance is actually merely pretense: "a completely different person seems to be appearing". Representing an individual fascination, example (318) stands for a "creative" interference with the factual appearance, which can be observed by everyone. Likewise, in for example (149), emaciation is the result of a"creative" interference with the conventional lexicalization slender. The normal flow of conventional speech is interrupted as it were by a creative linguistic act of a "higher order". The essential function of almost is to mark such an act, and it is interesting to note that thus, almost retains its etymological meaning (a merger of all and most).

8.2 As can be expected, almost occurs in contexts mirroring ongoing processes of encoding as in (145) through (148). Point in (150) and (151) of course coincides with an as if- appearance, triggered off by seem.

9.1 An interference with "automatic" normal flow of speech occurs because the basic perception contains conspicuous features causing a retracement. This is clearly illustrated in (152), where respond fully is elaborated on, the encoder dwelling on the underlying perception because conspicuous features arrest his attention (note the detailed description of the city). Almost zooms in on the basic perception, illuminating all its features (see section VIII). The construction in section IX, which is of crucial significance for almost, as it is for seem, mirrors this in another guise. Thus, for example, (169) can be rewritten like this: "As I consider young,it seems to me almost uncanny". By directing strong focus on the underlying perception of a word, almost tries to justify a certain designation, as in section X. Thus, in (173), bodily justifies (as if) lift. The as if- component that is attached to almost represents a hypothesis ("can perception X be given the name Y"), and the dynamism of meaning, marked by almost, consists of a striving to confirm this hypothesis. Example (174) is particularly interesting, since it shows how a "creative act" is transferred from the creator to another person ("I was reminded..."); consequently, communication arises.

9.2 The construction in XI and XII may appear to represent normal conventional flow of speech.Thus, red in red house (see section XI) is the name of an observed feature of house, this observation occurring prior to the lexicalization, of course - "this house is red, it is a red house". In example (175), the underlying observation is stated explicitly, "verbally torment an adversary", and as the encoder zooms in on this perception, retracing it, he "improves" a primary lexicalization by means of a "call"-word, "a cruel delight, so cruel that it is almost sadistic". The "improved" versions of an erased primary lexicalization, being more concrete in character, are "exaggerations" of the underlying perception, as can be seen in the examples of XI and XII. So, for example, blindingly in (181), captures in a more concrete way the idea underlying gleam,

something like 'light hits the eye'.

9.3 Section XIII rather resembles section X in that the head of almost justifies a conventional name.The underlying structure of (187) can represented like this: since he can be said to knock another person off his balance, the stranger is indeed without regard. Example (195) illustrates effectively the creative function of almost in that it shows how the encoder reflects on the concept honest: "as I consider honest here, I find that it is marked by 'rudeness'". A comment is added to this: "can this advance..." So, which modifies honest, not almost , is a forewarner for the emergence of an as if-appearance in the as-clause, "rude as if appears". Nearly, which has reference in itself, can be directly modified by so, as can be seen in (321).

10 The material after with in e.g. "Her voice was shrill with anger" is "known", since this construction implies that observed anger calls for a more subtle characterization, "so angry that her voice was shrill". The examples in section XIV can be interprteed similarly: ((196)): "clicked so much that their voices (as if) drowned".

11 An interference with the normal flow of speech naturally results in unexpected collocations, since the encoder is utterly free to insert whatever comment he likes on an "automatically" produced message. Examples of this are to be found in section XV ((211) - (217)). That such an interference actually occurs is evident from the fact that the head of almost replaces a word that can be assumed to be used in "normal" speech, as in (201) :"mildew and rust are so rare that they have become almost forgotten words." The selection of thoughtfully in (224) shows that the encoder takes the sole responsibilty for the wording: he must appeal to others to share his perception in order for communication to be established, since thoughtfully is not a normal conventional constituent of the context. Almost marks such an appeal. Such an adoption of personal responsibility is explicitly stated in (231) and (232). In (230), the realistic nearly forms the basis for (as if) run over, for which the encoder takes full responsibility. Likewise, the encoder must be the sole judge as to what constitutes the boundaries of concepts he lexicalizes. So, for example in (229), he decides what the boundary for Pip's corruption is.

12 As already noted, the etymology of almost indicates compromise:by considering all of a perception, the encoder decides what concept covers most of this basic perception, i.e. he compares the actual perception he is experiencing with other perceptions that have been given names previously. In this way he reaches the point at which the actual perception can be named. All naming implies comparison, and a comparison is of necessity an approximation.

12.1 In section XVI,I example (240) illustrates an approximation observable in the real world: "close to the point where someone can be touched", whereas the other examples in this section illustrate the sort of comparison that is a necessary component in the processes of encoding.

13 Since almost represents an as if- appearance, it characteristically

gives language permission to tamper with reality as it were, the head of almost often being an exaggeration. This is illustrated in section XVII, where almost + head, in accordance with the general function of almost, constitutes a conscious exaggeration, the purpose of which is to support a preceding "conventional" word, tilted ((251)), reached ((252) and (253)), pumped up ((254)), bring the redundancy up ((255)), softened ((256)), tired ((257)), and staggered ((258)). The fact that almost can function as an adjective (example (259)) is evidence that it is merely a marker rather than carrying a significance of its own. By contrast, example (260) bears witness to nearly having reference, the added and-sequel representing a circumstance that accompanies the stated nearness.

14 Contrastiveness, exemplified in section XX, supplies a message with an attitudinal component, resulting in the use of almost. Example (261), for instance, can be said to express: "As I consider 'suggestive', I find it remarkable that the example can be said to be trivial".

15 As we have seen in (147), the "philosophical" mind intrudes upon the normal flow of linguistic production in cases where a word expresses an absolute concept, with the result that almost is called for as an aid, giving pragmatic credibility to its head (XXI, XXII, XXIII, and XXIV). An interesting fact is that entirely, which dominates the category represented in XXI, is "double",just like appear. Thus, "Dora is entirely woman", cited in Bäcklund 1973, has the implication: "the concept 'woman' is totally valid for all of Dora".

15.1 A consideration of examples (308), (309), and (310) gives us further evidence as to almost signifying a "philosophical" intrusion into conventional linguistic production. The adjective destitute, designating an absolute in that it lacks flexibility, is readily collocable with almost, whereas the flexible poor accepts almost in a natural way only in the presence of a word indicating that the encoder is actually performing a creative linguistic act, as in (309) and (310).

16 Since almost is concerned with the relation between a perception and its designation, emphasizing the justification of the given name, it is natural that sequels of almost, as in examples (311) through (314), should contain comments on the appropriateness of the name. Because of the necessary approximative character of the naming process, these comments not only concern inclusion, as in (311), but exclusion as well, as in (312), (313), and (314). Nearly, on the other hand, emphasizes the failure of its head to be fully valid, as in (316), where the nearness is defined. In examples with nearly, it is often the case that the short distance between non-validity and validity of the head is defined, as is also the case in (324), which has the following implication;"Universal would have been fully valid,if she had not kept the secret according to the description. It follows that nearly, contrary to what is the case with almost, has reference, as is manifested in its collocations with degree modifiers (see section (XXVII)).Also, in section XXVIII, we find exemplification of intentionality, which implies that 'nearness' is consciously defined, s in (326), where the concept 'naked' is made not fully valid by an

intentional act. In (322), a few illiteracies defines the short distance between not transcended and transcended.

17 In examples (336) and (337), the selection of nearly is determined by because, since a motivation is given only for a realistic assessment. Such a head as otherwise (example (348)),could not be modified by almost, because it requires statement of the cause. The state for which a cause is given is always "known", and this also applies to be home in (333), because it signifies a state in relation to which the point of time of an event is defined. By contrast, almost in (334) and (335) presents the heads as new information, suggesting as if, as a result of which the when-clauses are given attitudinal components, 'relief' in (334) and 'irritation' in (335). Thus, almost creates the illusion that a movement actually reaches its goal, whereas nearly often suggests that a movement is arrested and reversed in time, before the goal is reached. This is illustrated in section XXX. Thus, for example nearly in (348) subtly expresses that attempts were successfully made to save a little girl's life. Similarly, in examples (343) through (347), items in the context suggest a sustained successful attempt to prevent the state indicated by the head of nearly: actually ridden up ((340)), force ((346)), burden((343) and (347)). In the latter example, burden is assisten by "work its way". In a rather similar way, contextual cues are to be found in the examples in section XXXI. The sentence structure in (349), indicating that nearly + head constitutes the basis for look like, and vision in (350) and rest in (351) make it clear that dying and closed refer to states. On the other hand, kept squinting in (352) refers to a dynamic act, which determines the choice of almost.

18 In section XXXII, liquidate and eliminate refer to clearly identifiable punctual acts, whereas be beaten to death is a verbal phrase dynamic in itself and do in is a verb that can be used in situations where the encoder is merely playing with words, as is actually the case in (354).

19 It is a noteworthy fact that modifiers like crashing (bore), raving (lunatic), blithering (idiot), brazen (hussy) etc., which all enter "frozen" collocations (see Bäcklund 1975), express negative ideas. These adjectives, being concrete versions of their heads, are likely to have arisen in creative acts of the type we are discussing here; thus, almost marks linguistic acts through which highly unexpected collocations (see examples (211) through (217)) as well as perfectly expected ones arise. On the other hand, the heads of nearly in section XXXIII, which are understatements, refer to positive ideas. Example (357) is an utterance made by an officer who triumphantly expresses this judgment after fighting ferociously. Similarly,(358) expresses relief, the utterance being made by a patient undergoing psychoanalysis. For the first time the patient has been able to talk freely about traumatic experiences. In her immense relief she feels that she can afford to express herself realistically, even using an understatement. Had she not been quite so convinced about her relief, but feeling that is what she ought to have experienced, she would probably have used almost fantastic/marvelous or some other strong adjective in order to persuade herself and others. A person having postive feelings can thus afford to take a realistic view of things, even to play down his feelings while nega-

tive emotions release the energy required for the search of appropriate names.

20 Certain(ly), expressing an abstract evaluation dependent on individual discretion, is typically modified by almost.However, in (360), the adjective statistical making certainty a clearly identifiable entity, the noun phrase requires nearly as a modifier. Similarly, a change of eating habits (example (361)) can be objectively identified. On the other hand, it can be merely a matter of opinion whether a person shakes his head or not (see example (285)). Empty in (362) attracts nearly as modifier because it is quite simple for everybody to see the difference between non-validity and validity of empty; this difference is constituted by the individuals that can be observed. On the other hand, tunnel-vision and monopoly in (363) and (364) are metaphorical adjectives produced in a creative linguistic act of "a higher order".The adjectives in these examples could hardly do without the modifying almost.

21.1 In conclusion, we consider another minimal pair (examples (365) and (366)). In (365), the speaker using almost there feels that it is necessary to persuade the man who, utterly exhausted, longs for their journey to come to an end, that this goal can be said to be reached. On the other hand, in (366), the mother waking up her son, uses nearly, thus emphasizing the nearness of the end of the journey. At the same time, she is emphasizing that there is still some time left for her son to get ready to get off the train.Most dictionaries state that both almost and nearly imply that the concept expressed by the head fails to be fully valid. But,as this study has shown,the two "synonyms" have opposite functions, almost as it were charming away the distance between non-validity and full validity of a concept, and nearly emphasizing this distance.

21.2 Almost symbolizes two essential properties of language.First, it represents its necessary approximative nature. Language bears witness to the eternal human struggle to make it possible for feelings and thoughts to be shared. Since we are individuals, this struggle cannot ever be a complete success. Almost symbolizes man's futile attempts to accomplish perfect communication, all standing for the totality of an individual's perception, while most signifies the necessary pruning of this totality in the naming process. Since language is dynamic in nature, subjected to constant change, we would expect to be able to observe in language as it is used today processes that are very similar to those through which language has arisen. Almost marks such processes. Consider example (181). We create and use words with the purpose of ordering and clarifying perceptions. When we create or use a word, we assign a specific property to a particular segment of perceptions, and this property is arrived at through a retracement of a perception, symbolized in English by as and so (so marks the point at which a name is found in a retracement marked by as) Behind gleam lies a segment of perceptions forming a semantic unit. This unit is arrived at in a process through which gleam is created, "my perceptions are such that they can be called gleam". Blinding,

being an "exaggeration", merely confirms the appropriateness of gleam. In essence, the act by which blinding is called upon to serve as the confirmation is the same as the creative act in which gleam is produced. The only difference is that blinding, striving for perfect communication,actually captures more of the underlying perception. This is accomplished through a concentration on this underlying perception, almost thereby futilely attempting to capture all its features. The construction "so + adj/adv + that + almost + head" is important for almost, and it is also significant for secondary lexicalizations (like blindingly in (181)),as is evident from the frequency of the pattern in (170) (with as if after the head of so).The other essential property of language symbolized by almost is the appeal to another "philosophical" mind which is necessary for the creation of new words and for communication to be established ("can you say the same that I say?"). Consider example (367), which is repeated in section XXXV.

21.3 Almost focalizes its head, whereas nearly emphasizes what is missing in a perception for a head to be fully valid. Thus, nearly in (368) carries the message "biblical would have been fully valid if Bond had been replaced by another name occurring in the Bible". The head of nearly can never be metaphorical, i.e. biblical in (368) means 'actually occurring in the Bible', not 'like something occurring in the Bible', which would be the meaning of biblical in collocation with almost. Thus, nearly represents statical meaning, whereas almost marks dynamic meaning.

21.4 One of the most conspicuous collocational indications of the dynamicalness of almost is its co-occurrence with seem (see, for example , section XVI). As is evident from collocations with verbs indicating personal feelings or perceptions, as "I seem to remember/feel", and with as-clauses, seem marks the interference with the flow of unlexicalized perceptions as well as with "automatic" speech by means of a retracement on the part of the "philosophical" mind, i.e. seem is important for an understanding of processes of lexicalization and relexicalization. Almost marks an even more primitive stage in such processes, as is evident from (369).

21.4 Linguistic analyses almost always inspire in us a feeling of awe at the amazing powers of the human psyche. Detailed studies of particular words, based on extensive amounts of data, appear to be perfectly capable of shedding light on these powers. In fact, such studies may very well prove to be the only means of gaining full access to an understanding of how man applies his mental capacity to his use of language.

ILLUSTRATIVE EXAMPLES

I Minimal pair
(1) It is made up of tumbling, which might be said to start with a somersault, run through such stunts as headstands, cartwheels, backbends, and culminate in nearly impossible combinations of aerial flips and twists --- and apparatus work. (BC)
(2) A major portion of the credit should also go to the flautist Haumd for his rendering of the almost impossible "Indianapolis" movement in the Baslot. Not only was Haumd's intonation and phrasing without flaw, but he seemed to take every tonal eccentricity in his stride. For example, to move, as the score requires, from the lowest F-major register up to a barely audible N-minor in four seconds, not skipping, at the same time, even one of the 407 finger-tips, seems a feat too absurd to consider. (BC)

II ALWAYS
a) almost
(3) An enthusiastic audience confirmed the "live" character of the hour, and provided the interaction between musician and hearer which almost always seems to improve the quality of the performance. (BC)
(4) He was obsessed by disease and poverty, by the melancholy of old age and the tyranny of lust. The children he painted were almost always in rags, his portraits were often ruthless to the point of ugliness, and his nudes - including several self-portraits- were stringy, contorted and strangely pathetic. (BC)
(5) For several months now, Jack Carter, a big overgrown boy of fifteen with a fuzzy, pimpled face and catlike eyes..., had been haunted by a dream, a vision, of a Woman. This Woman had no distinct shape or size and no particular face, but she radiated warmth, a sweet warmth; she would talk to him in a soothing voice about things his mother would have said were not nice and kiss him passionately. When she would do these things, he would turn blind for an instant and become sick at his stomach. Then he would run to the toilet behind the house. Sometimes he did this three or four times a day, for this Woman was almost always with him. He would feel ashamed each time and wonder whether his mother and father knew. (BC)
(6) But we must not forget, most of the appropriate heroes and their legends were created overnight, almost always with conscious aims and ends. (BC)
(7) When he came home from this office at the end of the afternoon, Breasted never knew what gathering he should expect to find, but there almost always was one. (BC)
(8) Motives - her husband wandering? Bitter unreasoning jealousy? Heaven knew it happened, and hell knew it too. But - it happened, almost always, among the primitive and, usually, among the very young. (BC)
(9) The repeated effort in Christian history to describe death as altogether the consequences of human sin show that these two aspects of death cannot be separated. Such efforts almost always find themselves compelled to ask whether Adam was created capable of growing old and then older and then still older, in short whether Adam's life was intended to be part of the process of time. (BC)

b) nearly
(10) I am sure that the engineer who enters management is nearly always opening the door to greater possibilities than he would have as a technical specialist because of his wider accountability. (BC)
(11) Clerfayt is neurotic, preoccupied, and passive. To be human, he believes, is to seek one's own destruction. The Freudian "death-wish" cliche inevitably cited whenever laymen talk about race-drivers. In point of fact, the race-drivers one knows are nearly always intelligent, healthy technicians who differ from other technicians only in the depth of the passion they feel for the work by which they live. (BC)
(12) A signal cannot be cleared until all the related turnouts are properly locked. Such locks are nearly always used where the switch points "face" oncoming traffic. (BC)
(13) Angrily Martin wished they had delayed the wedding and gone on a trip - preferably one that lasted months - instead of deciding not to postpone the date until he could get away. Here they were at the mercy of anyone who chose to come by. These stray people nearly always insisted on Dolores showing them around the apartment. (BC)

III EVERY
a) almost
(14) In the primary grades, reading permeates almost every aspect of school progress, and the children's long experiences of success or failure in learning to read often set a pattern of total achievement that is relatively enduring through the years. (BC)
(15) Their kind created an American culture superior to any in the world, an industrial and technological culture which penetrated Russia as it did almost every corner of the earth without a nickel from the Federal treasury or a single government specialist to contrive directives or program a series of consultations of interested agencies. (BC)
(16) Several photographs and charts of galaxies help the non-scientist keep up with the discussion, and the smooth language indicates the contributors were determined to avoid the jargon that seems to work its way into almost every field. (BC)
(17) Strange - but true, authenticity and realism aren't related at all. Almost every film bearing the imprimatur of Hollowood is physically authentic. But, alas, the authenticity seems to stop at the set's edge. The drama itself - and this seems to be lavishly true of Biblical drama - often has hardly any relationship with authenticity at all. The storyline, in short, is widely unrealistic. (BC)
(18) This experience will have happened to many of you. Emerson, in his lecture, refers to the "startling experience" which almost every person confesses to in daylight, that particular passages of conversation or action have occurredto him in the same order before, whether dreaming or waking, a suspicion that they have been with precisely those persons in precisely this room, and heard precisely this dialogue, at some former hour, they know not when. (BC)
(19) Never in other sections has there been the opportunity for the genuine down-to- earth discussions about the feelings of both spouses during the various stages of pregnancy. There was a particularly marvellous opportunity for study in this area since almost every stage was represented, from a childless couple to and including every trimester. (BC)
(20)...read a sinister purpose in almost everything she did. (BC)
(21) In 1945, probably almost every American not only knew who Sam Spade was, but had some kind of emotional feeling about him. (BC)
(22) To help him do so the Prince had conferred control of his land forces on a soldier who was different from him in almost every respect save one: both were eccentric. (BC)

b) nearly
(23) Even as he became widely known as a professional killer, nearly every cowboy and rancher in Wyoming seemed proud to call him a friend. (BC)

(24) The ball lay there, shining white on the grass in view of nearly every fan in the park while Ruth, red-necked with frustration, charged about the small patch of ground screaming, "Where's the -ing ball?" (BC)
(25) On this day the wind had switched 180 degrees from the northwest, and nearly every shot on the corner was different from the previous few days. (BC)
(26) Elections have figured prominantly in nearly every government program and official address since independence. (BC)
(27) As I was playing Mother Cabrini, the picture was actually "all mine", with nearly every scene built around me. (BC)

IV ALL
a) almost
(28)...these kings are important to almost all Persians. (BC)
(29)...a source of pleasure to almost all music listeners
(30)...very broad responsibilities touching on almost all aspects of a university-industrial program. (BC)
(31) Before that we lumber dealers were working almost singlehanded on the problem; here is where things stand today; almost all of the 3000 lumber dealers who cater primarily to the new-house market and apply 10% of this year's houses are mechanized. (BC)

b) nearly
(32) Nearly all the chairs were taken. (Patricia Highmark)
(33) ...and yet they cannot ignore this problem because it concerns the implementation of nearly all planning programs they have devised, (BC)
(34) And this is not, perhaps, the place to discuss Harlem's very complex attitude toward black policemen, nor the reason, according to Harlem, that they are nearly all downtown. (BC)
(35) Nearly all of the farm equipment manufacturers and dealers say the upturn in sales has resulted chiefly from the recent improvement in crop prospects. (BC)
(36) Being somewhat delicate in health, at the age of sixteen he was sent to southern Europe, for which he at once developed a passion, so that he spent nearly all of the following ten years abroad... (BC)
(37) It omits, for example, nearly all the great writers whose position is religious. (BC)
(38) The job security enjoyed by Doc, and nearly all members of the Armed Forces, is a wonderful tying. (BC)
(39) The Istiqlal sponsored U.M.C.I.A. ...in nearly all urban centers. (BC)
(40) Nearly all the turnpikes show gains in net revenues during the period.(BC)
(41) Traffic on nearly all the turnpikes has been growing. (BC)
(42) These planets are much bigger, nearly all capable of holding an atmosphere. (BC)
(43)...when he returned to live nearly all the rest of his life in Sweden. (BC)
(44) If, as Red says, "nearly all his poetry was produced when he was not taking opium..." (BC)
(45) "Oh yes, he came straight back after you'd left. He was there nearly all day, they made a huge lunch downstairs. (BC)
(47) Already accidental war is a silent guest at the discussion within the Kennedy Administration about the urgency of disarmament and nearly all other questions of national security. (BC)

(47a)Most of them are Democrats and nearly all consider themselves, and are viewed as, liberals. (BC)
(48) Many other - probably nearly all - snakes at maturity are already more than their final length. (BC)
(49) With his right fist, and nearly all his weight behind it, he smashed at the bloodstained face. (BC)
(50) It is this atomic nucleus that contains the positive charge of elecricity... It also contains nearly all the mass, and atomic energy. (BC)
(51) In rare cases, diseases such as encephalitis and a pituitary tumor may damage the appestat permanently, destroying nearly all sense of satiety. (BC)

V NUMERALS
a) almost
(52) I dropped the sheet, glanced at my watch. It was almost one, and I had'nt had lunch. (BC)
(53) The hull was also the result of almost a decade of research. (BC)
(54) Farm workers had their wages cut almost in half. (BC)
(55) The Hotel King Arthur across the street provided almost twice as many problems. (BC)
(56) A verdict against Pohl came at 4.05 after almost 13½ hours of deliberation. (BC)
(57) An agreement between the leaders of the four parties...was reached after almost 18 hours of politicalbargaining under the threat of an army coup d'etat. (BC)
(58) "You saw him only almost a full month later"! (American film on Swedish television)
(59) Imagine the searching and the prayer that lay behind the letter of resignation a rector of St. Luke's wrote after almost a decade of service to this majestic church. (BC)
(60) Even more formidable is the sewage industry, which by the year 2000 will be dealing with almost 37000 million gallons of municipal sewage each day. (BC)
(61) This angry and exasperated stance which Patchen has maintained in his poetry for almost fifteen years has been successfully modulated into a kind of woe that is as effective as anger and still expresses his disapproval of the modern world. (BC)
(62) You have heard him tell these young people that during his almost 50 years of service in the Congress he has seen the Kaisers and the Hitlers and the Mussolinis, the Tojos and and Stalins and Kruschews come and go and that we are passing on to them the freest Nation that mankind has ever known. (BC)
(63) Those that remain are those that are headed by strong executives, men with the abilities to last almost 30 years in the competive survival of the fittest.(BC)
(64) For almost one-sixth of the national population discrimination in the free selection of residence casts a considerable shadow upon these values assumed as self-evident by most Americans. (BC)
(65) Here, in two nations alone, are almost five hundred million people, all working, and working hard, to raise their standards, and in doing so, to make of themselves a strong bulwark against the spread of an ideology that would destroy liberty. (BC)
(66) In mid-September 1918, the influenza pandemic swept through every American military camp: during the eight-week blitz attack, 25000 soldiers died from the disease and the death rate, formely 5 per 1.000 men increased almost fifty times to 4 per week per 1.000 men. (BC)
(67) There are more than 8.000000 recreational boats in use in the United States with almost 10.000000 the prediction for within the next decade. (BC)

(68) Made of the world's toughest unbreakable plastic, Melamine dinnerware comes in almost 400 different patterns and dozens of colors. (BC)
(69) ...one study in Pittsburgh, however, has illuminated the situation: in a sample of new members of Pittsburgh churches, almost 60 per cent were recruited by "initial contacts with friendly members". (BC)
(70) Even when they are finished, however, the contrast will remain, for Istanbul is the only city in the world that is built on two continents. For almost 3000 years Europe and Asia have rubbed shoulders in the streets. (BC)
(71) This problem is perhaps as old as social casework itself. Almost three decades ago Berth Reynolds undertook a study of short-contact interviewing... (BC)

b) nearly
(72) ...and J.J. Quelch records a growth less than 4 feet to nearly 10 in about six years. (BC)
(73) A study...revealed the appalling fact that nearly forty percent of those who joined the Church were lost to the Church within seven years. (BC)
(74) Becoming aware that it was nearly lunchtime, I brought myself back to the tasks at hand. (BC)
(75) The value of seeds produced in the country for all purposes, including the cereals, is nearly 10 million dollars a year. (BC)
(76) August 4, 1821, nearly a century after Benjamin Franklin founded the Pennsylvania Gazette..., this paper made its first appearance as the Saturday Evening Post. (BC)
(77) Nearly twenty-five years before, Captain John Davis had noted, as he sailed near the Arctic Circle, "a very great gulf". (BC)
(78) But he painted some of the boldest and most original pictures of his time,and even after nearly half a century, the tense tormented world he has put on canvas has lost none of its fascination. (BC)
(79) Among individual dealers questioned in nearly a score of states, two of three report...(BC)
(80) Likewise, Karl formulated the nebular hypothesis, according to which the solar system was evolved from a rotating mass of incandescent gas, nearly a half century before its scientific value was made plain by Laplanc in his "Systeme de Monde". (BC)
(81) When he had closed the suitcase he found a rag and moved about the room, wiping carefully everything he might have touched. It took him nearly an hour.(BC)
(82) THe report was completed after nearly eighteen months of work on the question of the organization of the United Nations. (BC)
(83)...that "China Lobby" which, I was assured in Moscow nearly two years ago, exists "on the quiet" inside the party. (BC)
(84) The body of Henry, who had died nearly 180 years earlier, was torn to pieces by a mob. (BC)
(85) For nearly a year, they have been receiving counseling, separately and together, in an effort to understand and overcome the antagonisms which had given rise to the possibilities of divorce. (BC)
(86) ...and since nearly half of the characters in Great Expectations are of the the underworld or close to it...(BC)
(87) Nearly half the children still receive no education. (BC)
(88) It seemed unlikely that the crew,if either of them were alive, could even see the "Ariadne", for they were passing her at a distance of nearly a light year. (BC)
(89) Seven of the eight companies...have shown bargains averaging nearly 10% above last year. (BC)
(90) If it were not for the effect of destructive agencies, sawtimber would have been nearly twice as great as the 47 million board feet in 1952. (BC)
(91)...a quadrupling of the maturity length would result in a maximum of nearly 40 feet. (BC)
(92) "When you are thirty, he will be nearly seventy", said Arnold. (Iris Murdoch)
(93) This is to be accomplished by nearly doubling the present standards. (BC)
(94) His highest count of supporters numbered 72 - and he needed nearly twice that number to control the 260-member Democratic caucus. (BC)
(95) So obvious are the advantages that nearly 95 per cent of the population of New York State now has access to a system, and enthusiastic librarians foresee the day, not too distant, when all the libraries in the state will belong to a co-op. (BC)
(96) Nearly 18 per cent of West Berlin's 2.000000 residents are sixty-five or older, only 12.8 per cent are under fifteen. (BC)
(97) He...nearly doubled endowment to 139.3 million. (BC)
(98) The use of 100 instead of 140 substance paper plus the adoption of side stapling with the May 1960 issue reduced costs sufficiently to allow completion of the fiscal year with nearly 4.000 in unexpected funds. (BC)
(99)While fifty years before, Albert Goodwill Spalding, Secratary of the Chicago Ball Club of the National League, could write earnestly, could write earnestly to the manager of the Buffalo Club and request a guarantee of 100 dollars for a baseball game in August in the Golden Era, a game at the Yankee Stadium might bring in nearly a hundred thousand dollars at the gate. (BC)
(100) He promised nearly 200 Democratic county committee members at the meeting in Paddingstone Inn. (BC)
(101)They took nearly a month to investigate marshal statistics, and put their arguments down in black and white. (BC)
(102) Mendoze didn't wake until nearly nine-thirty. It was going to be another hot day. (BC)

VI AS + ADJ/ADV (+ AS)
a) almost
(103) Blood gushed from his nose, and he backed off as rapidly as he could, stumbling over his own feet in his frantic haste to get away from Curt's fists. Curt was in almost as bad shape but couldn't quit. (BC)
(104) Had More's writings been wholly limited to such exrecises, they would be almost as dimly remembered as those dozen or so writers living in his time, whose works tenuously survive in the minds of the few hundred scholars who each decade in pursuit of their specialized occasions read those works. (BC)
(105) He excited the young almost as much as Robert Kennedy. (The Observer 1968)
(106) The percentage of Jewish girls who attend college is almost as high as that of boys. (BC)

b) nearly
(107)...in cartoons that seemed nearly as large as life.(BC)
(108)...is an area nearly as large as Western Europe. (BC)

(89) Seven of the eight companies...have shown bargains avaraging nearly 10% above last year. (BC)
(90) If it were not for the effect of destructuve agencies, sawtimber would have been nearly twice as great as the 47 million board feet in 1952. (BC)
(91)...a quadrupling of the maturity length would result in a maximum of nearly 40 feet. (BC)
(92) "When you are thirty, he will be nearly seventy", said Arnold. (Iris Murdoch)
(93) This is to be accomplished by nearly doubling the present standard. (BC)
(94) His highest count of supporters numbered 72 - and he needed nearly twice that number to control the 260-member Democratic caucus. (BC)
(95) So obvious are the advantages that nearly 95 per cent of the population of New York State now has access to a system, and enthusistic librarians foresee the day, not too distant, when all the libraries in the state will belong to a co-op. (BC)
(96) Nearly 18 per cent of West Berlin's 2.000000 residents are sixty-five or older, only 12.8 per cent are under fifteen. (BC)
(97) He...nearly doubled endowment to 139.3 million. (BC)
(98) The use of 100 instead of 140 substance paper plus the adoption of side stapling with the May 1960 issue reduced costs sufficiently to allow completion of the fiscal year with nearly 4.000 in unexpected funds. (BC)
(99) While fifty years before, Albert Goodwill Spalding, Secretary of the Chicago Ball Club of the National League, could write earnestly to the manager of the Buffalo Club and request a guarantee of 100 dollars for a baseball game in August in the Golden Era, a game at the Yankee Stadium might bring in nearly a hundred thousand dollars at the gate. (BC)
(100) He promised nearly 200 Democratic county committee members at the meeting in Paddingston Inn. (BC)
(101) They took nearly a monthto investigate and marshal statistics, and put their arguments down in black and white. (BC)
(102) Mendoze didn't wake until nearly nine-thirty. It was going to be another hot day. (BC)

VI AS + ADJ/ADV (+ AS)
a) almost
(103) Blood gushed from his nose, and he backed off as rapidly as he could, stumbling over his own feet in his frantic haste to get away from Curt's fists. Curt was in almost as bad shape but couldn't quit. (BC)
(104) Had More's writings been wholly limited to such excercises, they would be almost as dimly remembered as those dozen or so writers living in his time, whose works tenuously survive in the minds of the few hundred scholars who each decade in pursuit of their specialized occasions read those wprks. (BC)
(105) He excited the young almost as much as Robert Kennedy. (The Observer 1968)
(106) THe percentage of Jewish girls who attend college is almost as high as that of boys. (BC)

b) nearly
(107)...in cartoons that seemed nearly as large as life. (BC)
(108) ...is an area nearly as large as Western Europe. (BC)

(109) Of course we have before us the example of the great races of the galactic center; individually they are nearly as mortal as you - .he difference does not seem very marked to us, whenever it exists. (BC)
(110) The bondage endured by an oral poet is to be estimated only by a very skilful oral poet, but it appears safe to assume that no sustained narrative in rhyme could be composed without extreme difficulty, even in a language of many terminal inflections. Assonance seems nearly as severe a curb,although in a celebrated passage William Malmesbury declares that a "Song of Roland" was intoned before the battle. (BC)

(111) But when he stepped on to the pavement he became conscious of the Saharan presence, standing nearly as high as the meridian over Piccadilly. (Rebecca West)
(112) The first thing every morning when she washed her face she could see the scar on her chin where he'd cut her with a boot cleat, and maybe she saw him heaving it again, the dirty sock popping out as it flew. It should have been nearly as easy for her to remember that as it was for Bill Hans to remember going after the axe while he was still spattered with Pa's yellow sick insides. (BC)
(113) 'I love you', she said. - 'I love you'. - 'I know'- 'That's nice as "I love you" really, isn't it? Nearly as nice anyway'. (Kingsley Amis)

VI. ALMOST THAN ON NEARER REPLACEMENT

(114) When Low Grade says I have hundreds of rivals but no real enemies, he is almost speaking the literal truth. (BC)
(115) Dominant stress on pity would be almost insulting him.(BC)
(116) Then he made a remark, almost to himself, which had nothing to do with what he had been talking about. (The Observer 1968)
(117) Stykia studied his captain. He almost broke into tears. (BC)
(118) Cady walked the block to the mailbox, almost ashamed with himself for arguing with Anna. (BC)
(119) I began to shudder with excitement, almost triumphant. (BC)
(120) ...and he saw Hazel laugh too, almost in her own way. (Patricia Highmark)
(121)...and lifted out the big volume, almost losing his balance from the weight of it. (BC)
(122) His son watched until he got as far as the hall, almost out of sight, then hurried after. (BC)
(123) 'No longer', said Vulkan gleefully, almost choking on his drink. (Ian Deighton)
(124) It was a startling, almost numenous sight. (BC)
(125) Morrison peered shrewdly, almost with hostility, at Jack. (Irwin Shaw)
(126) It was coarse, almost insulting, this harsh appraisal, and she has never come to see him since. (BC)
(127) He had not even thought about her except once or twice at night in bed when his ranging thoughts would abruptly, almost accidentally, encounter her. (Iris Murdoch)
(128) As a creative enterprise, its abilities are primarily "swallowing" enterprise developed outside of its organization - an ability made possible by us, and almost mandatory. (BC)
(129) Many of those aspects will be seen as comparable to those of the ideal detective, but where the detective is active and militant, the jazz musician is passive, almost a victim of society. (BC)
(130) Here in the Godforsaken place, the westerly end of nowhere, Tom Lord looked insignificant, almost contemptible. (BC)
(131) I got up. I felt suddenly exhausted, almost dazed, damp with sweat from head to foot as if I were outlined with warm quicksilver. (Iris Murdoch)

(132) In fact what I felt most in her was her lucidity, her transparency almost. (Iris Murdoch)
(133) Her flesh was cool, almost cold, and she shuddered, arching her neck. (Iris Murdoch)
(134) ...and silence was a weight, almost palpable, in the air.(Irwin Shaw)
(135) ...and taking its and her joint existence as a signal, almost a guarantee, that the real joyful life existed somewhere. (Iris Murdoch)
(135) In such a setting social contacts and associations are likely to be heterogamous, resulting in a change of values, and, almost necessarily,in mate selection. (BC)
(136) He was above all a friend seeker, almost pathetic in his eagerness. (BC)
(137) It's almost pathetic how grateful that girl is. (Irwin Shaw)
(138) She felt terrified, almost as if she were condemned to deat. (Iris Murdoch)
(139) In a low voice, almost whispering, the man had asked... (Iris Murdoch)
(140) "Yes", she said, almost in a whisper, as if admitting to a crime. (Herman Wouk)
(141) Holt sounded diffident, almost a little guilty, as if he had just confessed he and his wife were just planning a crime. (Irwin Shaw)
(142) Every year, it seemed almost every month, it became harder to ask the most innocent unloaded question. (Iris Murdoch)
(143) ...seemed vast endeavors almost beyond the ability of his shaking body.(BC)
(144) My memory has catalogued for easy reference and withdrawal the image of her pink, scented stationary, and the unsloped, almost pointed, configuration of her neat studious handwriting. (BC)
(145) Of course,we all remember 1948 when the Chicago Tribune - well, almost the entire US press, really elected Thomas E. Dewey President. (The Observer 1968)
(146) When you see him you'll notice his habit of fingering, I might almost say stroking, a large mole with black hair on it, by his right temple. (John Wain)
(147) But any human person is infinitely more complex than this type of explanation. By "infinitely" (or should I say"almost infinitely"? Alas, I am no philosopher.), I mean... (Iris Murdoch)
(148) She cannot possibly feel - for me - almost an old man - it would just disgust her - she simply wouldn't want to see me again. (Iris Murdoch)
(149) So beautiful, so distinguished, slender almost to emaciation. (Phyllis Bentley)
(150) THe result was like that of a beautiful painting with some of the highlights touched up almost to the point of garishness. (BC)
(151) ...bandits and outlaws have been glorified almost to the point of hero-worship. (BC)
(152) In her mind's eye - her imagination responding fully, almost exhaustingly, to these peculiar powers of stimulation - she saw the city as from above, telescoped on the great blue plains that the ruins marked, aqueducts and tombs, here a cypress, there a pine, and all around the low blue hills. (BC)

VIII A CONTEXTUAL BASIS OF ALMOST
(153) It was nevertheless almost incredible that four years after Yalta there should be a complete split over Germany, with hot heads on both sides planning to use Germans against their former allies, and with Nazi-minded Germans expecting to recover their power by fighting on one side or the other. (BC)
(154) The clerk's eyes flickered. "Of course not. Anybody with a contagious disease been there"? The clerk was almost hysterical. "It's just that - well, it's being redecorated". (BC)

(155)...travel in Laos is just about impossible. Alas, so it almost proved for us too. To go outside the few cities required permits, and getting there seemed a life's work. (BC)
(156) THe figure leapt from the box, almost lost its balance; the flag draped there tore in the air, the figure landed on its left leg, fell on its hands, and pressed itself up. (BC)
(157) Though Garibaldi's fight was small shakes compared to Picket's charge - which, like all Southerners, I view in almost Miltonic terms, fallen angels etc., I associated the two. (BC)

IX THE CONSTRUCTION "SO + ADJ/ADV THAT ALMOST'
(158) Marian's heart began to hit her so hard that she almost fell down. (Iris Murdoch)
(159) This was a thought so agonizing that he almost had to bend down double over the pain. (Iris Murdoch)
(160) He was so tall he almost touched the beams above. (Iris Murdoch)
(161) He was so desperate he turned himself almost inside out. (Irwin Shaw)
(162) Lord slugged hom in the stomach, so hard the organ almost pressed against his spine. (BC)
(163) Boynton Beach: a motel so close to the ocean it was almost under water.(Lawrence Sanders)
(164) THis French film...so breath-taking that at times you almost forget the horrors it is dealing with. (BC)
(165) He almost burst into tears, he was so disappointed. (Iris Murdoch)
(166) Tom said he almost burst into tears, he was so disappointed and put out. (Irwin Shaw)
(167)...and my affection for Rachel has become something so habitual as to be almost feigned. (Iris Murdoch)
(168) ...and since she was so thin as to be almost shapeless, she rather resembled a frozen fish stick. (BC)
(169) I got up and shaved and dressed with care and looked at my new face in the mirror. I looked so young it was almost uncanny. (Iris Murdoch)
(170) I saw the Post Office Tower. and it was as if I myself were as high as the tower, so closely and so clearly could I see all its glittering details.(Iris Murdoch)

X ALMOST + HEAD EMPHASIZING THE GENUINENESS OF A CONSPICUOUS CONCEPT
(171) It had an almost uncanny degree of presence of being. (Iris Murdoch)
(172) The sight of the wedding-ring on her wrinkled finger...brought the nausea almost to his mouth. (Iris Murdoch)
(173) Dean still hesitated, but Mike lifted him almost bodily into the saddle and thrust the reins in his hand. (BC)
(174) A borderline schizophrenic young man told me that to him the various theoretical concepts about which he had been expounding, in a most articulate fashion, during session after session with me, were like great cubes of almost tangibly solid matter up in the air above him; as he spoke I was reminded of the great bales of cargo which are swung high up in the air, from a docked steamship. (BC)

XI ALMOST + ADJ + NOUN
(175)...his peculiar form of witty word play that even in this Latin banter has in it the unmistakeable element of viciousness and an almost sadistic delight in verbally tormenting an adversary. (BC)

(176) Priscilla had been much relived when I had agreed to go and fetch these objects, to which she seemed to attach an almost magical significance. (Iris Murdoch)
(177) ...an almost childish sense of defiance. (Irwin Shaw)
(178) In a time when poetic style, and poetic belief as well, seem in a state of continual flux, Hardy stands out as a poet of almost perverse consistency. (BC)
(179) What was perhaps more important than his concept of the nature of history... were those forces which shaped the direction of his thought. Inthe final analysis his contribution to American histiriography was founded on almost intuitive insights. (BC)

(189) What followed the outburst brought almost breathless silence as Miss Sutherland revealed her mastery of a voice probably unique among sopranos today.(BC)

XII ALMOST + ADV
(181) ...whiteteeth that gleamed almost blindingly from a round, red, and rather diasagreeable face. (Paul Gallico)
(182) This mountain was known as the Black Reef, and it rose almost perpendicularly for about two hundred feet, honeycombed with caves. (BC)
(183) Mr Skyros did not at all like the look on Angelo's regular-featured, almost girlishly good-looking face. (BC)
(184) ...almost authentically sorrowful tears. (Irwin Shaw)
(185)...she had betrayed an origin almost comically lowee. (Rebecca West)
(186) And one cannot but wonder whether Marshal Malinowski, who was blowing hot and cold, exalting peace but also almost openly considering the possibility of preventing war against the West...(BC)

XIII THE HEAD OF ALMOST CONCRETIZING AN ABSTRACT CONCEPT
(187) Without any regardfor rest-room protocol, the hulking stranger almost knocked him off his balance. (BC)
(188) Principal author of the "Federalist", he swung New York over from opposition to the Constitution to ratification almost single-handedly. (BC)
(190)She had to detach herself from the archway almost by pulling her hands off the stone. (Iris Murdoch)
(191)...with almost embarrassed pride in thosestooping shoulders. (Irwin Shaw)
(192) The great ultimate ends of religion have served as magnificent beacon lights that lured people toward them with an almost irresistible force, mobilizing energies and inducing sacrifices. (BC)
(193) Elaine and Poet returned together, popping up over the transom almost like dolphins breaking water. (BC)
(194) Almost in tears now, Marian said, exasperated and determined to understand him... (Iris Murdoch)
(195) Would he, indeed, be advancing the cause of the British Empire, of civilization, of peace, were he so almost rudely honest? (Rebecca West)

XIV ALMOST + HEAD + WITH
(196) The bus manoeveredslowly while the tourists inside jumped to their feet exclaiming "Mama mia", and almost drowning their voices with the clicking of their cameras. (Life 1968)

(197) ... her oval face was almost insipid with compliancy. (Rebecca West)
(198) He felt for a moment almost faint with suppressed anger. (Iris Murdoch)
(199) He felt almost faint with terror. (Iris Murdoch)

XV. THE INVENTIVENESS OF THE HEAD OF ALMOST
(200) Then, with a glory that almost wiped out the deep downward sags in her careworn face, Matilda leaned forward over the wheel and shouted to her... (BC)
(201) The cleaner air means...clothes hold their shape better, and mildew and rust become almost forgotten words. (BC)
(202) Experts say that partners in marriage can almost be typed. (BC)
(203) At that moment, Holden almost slammed on the brakes to go back to Casper and ask what Ferguson was about...(BC)
(204) She had almost run blindly into Gerald Scottow. (Iris Murdoch)
(205) ...whom Morcan had almost to drag away to give his wife access to him. (Phyllis Bentley)
(206) The guards almost carried him away. (Kingsley Amis)
(207) But if I am on my own for three days, doing nothing, I almost leave myself completely. (The Sunday Times 1968)
(208) But casual social pecking and patting can be, in some cases, almost an inoculation against stronger feeling. (Iris Murdoch)
(210) There is an almost instrumental quality to their singing.(BC)
(211) She was almost sick when Bobbie came with the news that poor John had won the job. (BC)
(212) "How many times have I told you", he began, and he was almost glad when something cut him off. (BC)
(213) And he really feels that way, she thought. That's really all he's got, all he is.Just a big pile of self-confidence in an almost teensy package.(BC)
(214) He enacts the purification of speech, and yet also this is something comic, a sort of trick, like a huge pun, like an almost pointless joke.(Iris Murdoch)
(215) The two women were conversing in pure sound, their voices circling, blending, creating a trembling silver cage of an almost obscene sweetness. (Iris Murdoch)
(216) He wiped his lips with a sleeve, then he asked almost shyly - "You want me to go with you wherever you're goin'"? (BC)
(216) "Sol's dead", she said almost blithely. (Lawrence Sanders)
(217) He leaned forward almost tenderly over his victim. (Iris Murdoch)
(218) Well, sir...they (food supplements) did real great. For in almost less time than it takes to tell it, his weight was increasing. (BC)
(219) Before yourfirst training experience has ended there will be a big improvement, and almost before you know it you'll be raising and lowering yourself just like a veteran. (BC)
(220) He had already become used to Hesperos snapping back questions almost before Jack could get them asked. (BC)
(221) No wonder Wright was enchanted - no two better suited pepple ever met. Almost from that day, until his death, Olgivanna was to stay at his side. (BC)
(222) Orlich might almost be Magwitch's bogyman come alive, a figure of nemesis from Pip's phantasy of guilt. (BC)
(223) When he thinks that perhaps he is doomed for ever to be well known, whatever he does from now on, it almost makes him scream. (BC)
(224) Others, badly wounded, gripped hands in manes, knees in bellies, held on as long as possible and then, weak from ghastly wounds, slipped sideways, slowly, almost thoughtfully, to be broken under the slashing hoofs. (BC)

(225) You can almost see him stiffen. (Arnold Wesker)
(226) 'It almost approaches the Unknowable, wouldn't you almost say, Robin'?
(227) She almost feared to find that she had overlooked some person standing in the corner. (Iris Murdoch)
(228) It almost looked as if he might win. (The Observer 1968)
(229) Almost the first step in the corruption Pip's values is the unworthy shame he feels when Estella cruelly remarks the coarseness of his hands:"They had never troubled me before, but they troubled me now, as vulgar appendages. (BC)
(230) I almost ran over the snake before I could stop the tractor in time... I looked again down the furrow, the snake was there. It lay half in the furrow and half out, and the front wheels had rolled nearly up to it when I put in the clutch. (BC)
(231) I felt at times, it is hard to describe this, almost mad with guilt, with a sort of general guilt about my whole life. (Iris Murdoch)
(232) It is no longer possible to say that a sceptical attitude towards the received accounts of the invasion almost automatically produces a "shore occupied by" interpretation. (BC)
(233) His hands lay loose, yet stiffly - they were like wax hands: almost lifelike, not quite - folded in his lap...(BC)

XVI ALMOST COLLOCATING WITH SEEM
(234) Just the evocations of time and place, of passionate encounter between man and a natural world that today seems almost lost, would be enough. (BC)
(235) Boris' first entrance seems almost a footnote to the splendor of the Coronation scene, with its dazzling confusion of tonalities. (BC)
(236) And knowing its humble place in the scale of things, why did he, at this time of life, seem almost ready to sell his soul for plumpness. (BC)
(237) Yet Denis himself seems now almost invisible. (Iris Murdoch)
(238) It seemed almost an impossible task for Miss Rogers to select four winners from the 46 Juniors entered. A large number of these Juniors have 7 or 8 wins to their credit and are seasoned campaigners.(BC)
(239) ...he may be able narrowly to gain the victory that would have seemed almost impossible only a few months ago.(BC)

XVII COMPARISON
(240) Denis was now almost near enough to touch him. (Iris Murdoch)
(241) That was almost worse than the first time. (BC)
(242) He knew her mind pretty well by now, its quick perceptions and sympathies, its painful insistence on truth and directness, its capacity for love, almost too deep for a man to reciprocate, even in part. (BC)
(243) It was almost too easy. (Herman Wouk)
(244) The room was almost the same. (Irwin Shaw)
(245) The days seemed short, perhaps because his routine was, each day, almost the same. (BC)
(246) But it does show that automobiles have increased steadily over the years and in almost the same proportion. (BC)
(247) Her tone made it sound almost like a threat. (Iris Murdoch)
(248) ...which her brother did almost like second nature. (Paul Gallico)
(249) They eyed each other almost like sparring partners. (Irwin Shaw)
(250) It was almost as if Hazel lay beside him in that bed. (Petricia Highmark)

XVIII THE DYNAMICALNESS OF ALMOST
(251) ...with a pure-white new hat tilted forward almost to his nose. (Herman Wouk)
(252) A dark mahogany erection containing a mirror surmounted the fireplace and reached almost to the ceiling. (Iris Murdoch)
(253) The tall sash-windows, which reached almost to the floor...(Iris Murdoch)
(254) By this time Henri's chest is pumped up to almost bursting-point. (BC)
(255) This is done for simplicity of commands and to bring the hidden redundancy up to where misunderstanding has reached almost zero possibility. (BC)
(256) "You own this place?" she said, and her tone had softened until it was almost friendly.(BC)
(257) David Cortland was tired beyond almost the limits of his flesh.He had ridden hard from Boston, and he was not used to horseback. (BC)
(258) She got to her feet, staggered, and almost fell. He caught her by an arm and helped her into the kitchen. (BC)
(259) As for the Jewish preacher Jesus Christ, Morcar admired and respected his teachings, but sometimes felt that the excessive self-sacrifice, the almost masochism, was more than could be expected from human nature as at present constituted. (Phyllis Bentley)

XIX THE REALISTICALNESS OF NEARLY
(260) The front windows of the place were low and narrow, reaching nearly to the floor and affording an unusually good view of the interior. (BC)

XXX CONTRASTIVENESS MAKES THE HEAD OF ALMOST CONSPICUOUS
(261) This almost trivial example is nevertheless suggestive, for...(BC)
(262) From the lead weight her almost weightless body had assumed, from the blue shadows that lay on her closed eyelids and round her lips, he perceived that some monstrous blow had felled her. (Rebecca West)
(263) He felt not a faint belief but almost a certainty of the presence of evil round about him. (Iris Murdoch)
(264) She had always been well-groomed, but recently she had become almost slovenly. (BC)
(265) Political theoretical understanding, although almost at a standstill during this century, did develop in the eighteenth and nineteenth centuries, and resulted in a flood of inventions which increased the possibility for man to coexist with man. (BC)
(266) "Oh, he'll be a plumber", came the answer. "But isn't it almost impossible to get into the union"? I asked. "He'll have no difficulty", I was told. "He has very good connections2. (BC)

XXXI THE HEAD OF ALMOST EXPRESSING TOTALITY
(267) ...he woke up with a first-class design almost fully formed in his mind. (Phyllis Bentley)
(268)...had been almost totally destryed overnight. (BC)
(269) In a strange way I was almost entirely agnostic about what Julian thought. (Iris Murdoch)
(270) It had lost sight of the individual almost entirely. (BC)

(271) Criminality in the detective has almost entirely disappeared. (BC)
(272) The island folk have their living almost entirely from summer visitors. (BC)
(273) The element of mass conspiracy is almost entirely absent from student protest. (The Observer 1968)
(274) Because the bobin-to-cone winding process is a relatively high-cost operation for the mill, the almost complete operation provided by Uniconer can mean important economies in textile production at the same time upgrading quality. (BC)
(275) However, even if the latend demand for demythologizationis not nearly as wide-spread as we are claiming, at least among the cultural elements of the population there tends to be an almost complete indifference to the church and its traditional message of sin and grace. (BC)
(276) ...even though the crowds were absent and there was almost complete silence. (BC)
(277) Depicted, Cubist flatness is now almost completely assimilated to the literal, undepicted type. (BC)

XXII ALMOST COLLOCATING WITH NEGATIVE WORDS
(278)She found the degree of attention almost unendurable. (Iris Murdoch)
(279) ...when he had been brought into the ward almost unconscious.(Patricia Highmark)
(280) Mr Nichols was told that his government's dogmatism on many union questions was almost unbelievable. (The Observer 1968)
(281)The BBC indulges in an almost useless orgy of self-criticism.(The Observer 1968)
(282) In this hour of crisis, the dedication, the wisdom, the stabilizing force that he represents in current American government is an almost indispensable source of strength. (BC)
(283) It would take time; it would, almost inevitably, trouble some water. (BC)
(284) Almost inevitably, the first result of this technological revolution was a reaction against... (BC)
(285) He shook his head almost imperceptibly. (Life 1968)
(286)...in his almost incomprehensible Sicilian French. (Irwin Shaw)
(287) He dictates at an almost incomprehensible speed. (The Observer 1968)
(288) She fell almost involuntarily to her knees. (Iris Murdoch)
(289) It might be that certain peole were born with a compulsion to complicate their lives, while others could live blissfully motionless almost indefinitely, like lizards in the sun, too indolent to blink their eyes. (BC)
(290) The stepmother, almost without exeption, has been presented as a cruel ogress. (BC)
(291) Her religion was almost non-operatic in cases like this. (Irwin Shaw)
(292) Patchen has almost never used strict poetic forms; he has experimented instead with personal myth-making. (BC)
(299) Its holder is allowed almost no independence. (The Observer 1968)
(300) I found it fairly depressing and emerged almost immediately. (BC)

XXIII NEARLY COLLOCATING WITH NEGATIVE HEAD
(301) Herbie was nearly speechless, but he managed to say, "Thank you, Pa. Gosh, that's marvellous. (Herman Wouk)

XXIV ALMOST COLLOCATING WITH WORDS DENOTING ABSOLUTE IDEAS
(302= He was almost certain he was right. (Irwin Shaw)
(303) I saw little Billy rise and fire almost point-blank, and an Indian's face became shattered flesh and bone. (BC)
(304) "Be careful, McLish", Susan said fiercely. "THe way you were careful", he snorted. "Running almost naked and slugging a man with a rock". (BC)
(305) "Shucks, Gran", they said almost in unison. (BC)
(306) It was almost dark in the room now. (BC)
(307) He was almost bald. (Kingsley Amis)
(308) She was almost destitute. (The Observer 1968)
(309) She is almost poor, one could say. (Concocted example)
(310) She is poor, one could almost say. (Concocted example)

XXV EVIDENCE FOR ALMOST PLACING THE FOCUS ON ITS HEAD
(311) ...and her nuclear power will be used for almost all submarines, including the potential Polaris missile submarines. (BC)
(312) The tiny kitchen was almost empty, except for an enamel bowl full of dirty underwear and two large family-size packages of Tide. (Ian Deighton)
(313) This was the largest house he had been in, almost the largest, except for a hotel. (BC)
(314) ...and capital costs found to vary with number of customers regardless, or almost regardless, of power consumption. (BC)
(315) He looked at her as she spoke, then got up as she was speaking still, and, simply and wordlessly, walked out. And that was the end. Or nearly. (BC)
(316) In the eighteenth century there emerges for the first time the notion of a private tragedy - or nearly for the first time, there having been a small number of Elizabethan domestic tragedies..(BC)

XXVI ALMOST COLLOCATING WITH AS
(317) He almost hit the ceiling as he leaped up in fright. (Paul Gallico)
(318) Miss Sutherland appears almost as another person. (BC)

XXVII EVIDENCE FOR NEARLY HAVING REFERENCE
(319) In March there was a division of the slaves, and Griffen carried out his instructions as nearly as possible. (BC)
(320) This is the story of the last voyage, as nearly as we are able to determine. (BC)
(321) Nothing was there but the hot stones of the houses and the pavement, which looked so nearly white in the strong glare that it was as if their outer surface had been burned away. (Rebecca West)
(322) (Very nearly in tears now).(Stage direction; Harold Pinter)

(323) There are times, Brian, when I very nearly like you a great deal...(Kingsley Amis)
(324) Sweet Harriet, she would take any secret he gave her, fold it neatly as if it were a fine linen handkerchief and pop it inside her bodice between two mounts that were indubitably a woman's breasts yet did not prevent her from being childish, and there it would lie, safe as a packet of Mint; and while she wore it so her face would look at the world with an expression of the most nearly universal benevolence and the most gallant obstinacy, as if it were saying it would give it anything it wished save only that. (Rebecca West)

XXVIII THE EXACTNESS OF THE HEAD OF NEARLY
(325) It would, therefore, be foolish to spurn the Lords' scheme for the sake of this Commission's work as it would be to delay the dealing with the nearly completed report on local government. (The Sunday Times 1968)
(326) They emerged as interchangeable cogs in a faulty but formidable machine: shaved nearly naked, hair queued, greatcoated, jackbooted. (BC)
(327)The proteins were extracted with three volumes of in to give a nearly neutral extract...(BC)
(328) The effect is that the platform returns from an off-level position at a rapid rate until it is nearly level...(BC)
(329) Dr Best took one of them by the wrist and lifted it until it was nearly horizontal. (Kingsley Amis)
(330) Nearly level areas are required for parking areas, beaches, camp areas, ball fields etc. etc. (BC)
(331) Electron microscopic examination of the sample showed it to be composed of nearly isotropic particles about 0. (BC)
(332) Spelling excellent by modern standards but with a few illiteracies. Could indicate either a good education imperfectly absorbed or a bad one nearly transended. (Kingsley Amis)

XXIX THE STATICALNESS OF THE HEAD OF NEARLY
(333) "...and the news didn't catch up with us till we were nearly home."(Irwin Shaw)
(334) They rode in silence until thet were almost at the airfield, when Fan, leaning forward from the back seat, said urgently...(Phyllis Bentley)
(335) I had almost given up when I realized what the solution was. (Herman Wouk)
(336) After I had been brooding upon this truly awe-inspiring insight for some time my heart nearly fell out of me because the telephone rang.(BC)
(337) There was the headmaster, making speeches on law and order and the necessity of discipline, and giving me sweets on the sly, nearly frantic because he knew if I didn't confess, the authorities would be down on him and there would be an enquiry. (Doris Lessing)

XXX NEARLY INDICATING A "SAFE" DISTANCE FROM THE VALIDITY OF ITS HEAD
(338) Ayscue found himself nearly grinning. (Kingsley Amis)
(339) She was nearly hysterical with fright. (Webster's Dictionary of Synonyms)
(340) "She's been very ill. She nearly died".("The Price", English film on Swedish Television)

(341) We swayed together, nearly falling, over the piled mackintosh upon the floor. (Iris Murdoch)
(342) In final separation from them, in the railroad terminal across the river in New York, I would nearly cry. (BC)
(343) Despite this laughter, these sniggers, the service went on and business was done; but as in the burden of some nearly overwhelming weight. Paul Gallico)
(344) Jones who had apparently - and actually - ridden up the nearly impassable hillside...(BC)
(345) Times Square...was nearly impassable, the sidewalks swarming with celebrants, with bundled up sailors and soldiers already hugging their girls...(BC)
(346) He rose stiffly, forcing his knees to lock. The knifelike pain in his groin nearly brought him down again. (BC)
(347) Inside the passage he had to work his way over fallen timber and nearly collapsed under his clumsy burden. (BC)
(348) Not until six years afterwards did Arnold Condorex see Harriet Hume again. It was nearly otherwise, for within two years of their parting his footsteps led to the door of Blennerhasset House, and it was sheer singularity that forbade him enter it. (Rebecca West)

XXXI THE GIVENNESS OF THE HEAD OF NEARLY
(349) I must look like a cow, he thought, inching along and bent nearly double. (William Golding)
(350) I had a vision of myself returned in ragged uniform from the Front, nearly dying, my head bandaged and blooded; and Jessica bending over me, the power of her love bringing me back to life. (BC)
(351) Jessica Packer lifted her head and followed the retreating figure, her eyes resting nearly closed on the unself-conscious rise and fall of the hips. (BC)
(352)...so he kept squinting at them occasionally, from beneath almost closed eyelids which made for a rather blurred effect. (Paul Gallico)

XXXII ALMOST AND NEARLY WITH HEADS MEANING 'KILL'
(353) Finally, after almost being beaten to death by a madman, he throws up his mission and returns to Europe. (BC)
(354) The unexpected that almost did us in was the weather. (Lawrence Sanders)
(355) Perhaps Kruschew is in a more difficult position than any since 1957, when the "anti-party group" nearly liquidated him. (BC)
(356) ...the anti-Nazi underground which very nearly eliminated Hitler in 1944. (BC)

XXXIII NEARLY WITH POSITIVE HEADS
(357) "The victory is nearly complete!"(Herman Wouk)
(358) You see, it was nearly all right, telling you all this. (Kingsley Amis)
(359) Suddenly excited, he got to his feet. He was nearly sure he remembered someone saying that young Pearce played the flute in the camp. (Kingsley Amis)

XXXIV THE CONCRETENESS OF NEARLY AND THE ABSTRACTNESS OF ALMOST
(360) If it continues indefinitely it is nearly a statistical certainty that a mistake will be made and that devastation will begin. (BC)
(361) Toward previous centuries eating changed by nearly imperceptible degrees, and mostly toward just getting enough. (BC)
(362) In August when Hazel said the town was nearly empty. (Patricia Highmark)
(363) ...an almost tunnel-vision ability. (The Observer 1968)
(364) ...with an almost monopoly hold upon the channels of communication. (The Observer 1968)

(365) Watson stumbled down the bank. The man leaned his frail body against Watson's shoulder. He was no heavier than a child. Watson paused for breath. The man wheezed weakly, his fetid breath beating softly against Watson's neck. His sweet whisper came after great effort -- "Oh, Christ-- I wish you was Henry. He promised to take me--"Hush, we're almost there." (BC)
(366) "Stevie, wake up now. We're nearly there",The train had slowed. (BC)
(367)'It almost approaches the Unknowable, wouldn't you almost say, Robin'. (The Observer 1968)
(368)And when Greek teen-ager carves up a co-villain, the reaction of 007 comes nearly biblical: "Bond shuddered".(Life 1968)
(369) ...unpleasant, at times it seems almost un-Christian. (The Observer 1968)

Abbreviation

BC refers to the collection of texts generally referred to as "The Brown Corpus"

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THE SEMANTICS OF -O- IN COUSHATTA

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In several Muskogean languages there is a suffix -o- whose functions have been variously described in terms of focus, emphasis, contrastiveness, definiteness or indefiniteness. This suffix also occurs in Coushatta, a Muskogean language spoken in Texas and Louisiana. The terms employed for the definition of the functions of -o- in the other languages are not adequate to encompass the full range of its meanings in Coushatta. The difficulty in characterizing the semantics of -o- arises partially from the fact that it occurs with all categories of words, as well as with phrases. Further complexity is introduced by a set of suffixes -k, -t, and -n, which may follow -o- and affect the interpretation of its meaning.

Homophonous morphemes, semantically specific for each category of words, could be posited from the following sentences.

NOUNS: -o- indicates "new" information.

1 if-o-k wowohk
dog-o-k bark
A dog is barking.

2 am-ifa-k ibi-t cokf -o-n
my-dog-k kill-P rabbit-o-n
My dog killed a rabbit.

PRONOUNS: -o- indicates "emphasis."

3 an-o-k axxa-l-aN
I -o-k go -I-F
I will go.

4 kosn-o-n kon-talwa-hci
us -o-n us -sing-As
She is singing to us.

Alternatively, a single morpheme, some aspect of whose meaning is present in all contexts where -o- occurs, can be proposed. This

study is an attempt to demonstrate the validity of the second assumption.

The contrast exhibited in (5) and (6) seems to support the evidence in (1) and (2) that there is a correlation between the occurrence of -o- and new information.

5 takkolcob-o-k pacokkol paholimpa-faN

apple -o-k sit table -L

An apple is on the table.

6 takkolcoba-k pacokkol paholimpa-faN

apple -k sit table -L

The apple is on the table.

However, the contrasting suffixes on the noun takkolcoba in (7) and (8) and in (9) and (10) suggest that there is only partial coincidence of -o- with new information since both takkolcobaN and takkolcobon are glossed as "an apple."

7 takkolcoba-N ci -banna-N

apple -n you-want -Q

Do you want an apple?

8 takkolcob-o-n ci-banna-N ilkoN yalaaha-N

apple -o-n you-want-Q or orange-n

Do you want an apple or an orange?

9 takkolcoba-N ohtis

apple -n get

Go get an apple!

10 takkolcob-o-n ohtis

apple -o-n get

Go get an apple!

When a single item is offered in (7) in the form of a "yes" or "no" question, -o- does not appear. But when a choice between two or more items must be made, as in (8), -o- occurs with the first item in the list.

Reference to a larger context explains the difference in suffixes in (9) and (10). The person who carries out the injunction in (9) is meant to select an apple from a group of other apples. The context of (10) includes other kinds of fruit as well as apples. It is this possibility of selecting an item from two or more generi-

cally different alternatives which conditions the appearance of -o- in both (8) and (10).

These sentences demonstrate that while -o- occurs with new information, not all new information is marked with -o-. An item which is selected is indeed new, but it is nor primarily "newness" which -o- signals but rather the fact that the particular item marked with -o- has been selected from a group of alternatives appropriate to the context.

Sentences (11) and (12) suggest that the meaning of -o- includes the notion of "identification."

11 tikba-k naaho-N

fire -k be -Q

Is there a fire?

12 tikb-o-k naaho-N

fire-o-k be -Q

Is there a fire?

13 tikb-o-k naah

fire-o-k be

There is a fire.

The presence or absence of a fire, perhaps in a fireplace, is the concern of (11). There is uncertainty, indicated by -o-, in (12) about the identity of what is seen. Since something which resembles smoke is visible, there may be a fire. Sentence (13) confirms the suspicion; there is indeed a fire. The same idea of "identification/discovery" is also present in (14).

14 kaaliN if -o-k

there is dog-o-k

There is a dog!

Another dimension of the meaning of -o- is that of "differentiation." In sentences (16) and (17) "dog" is explicitly distinguished from other canines by the parenthetic comments.

15 ifa-k kacaxi-t katti-N

dog-k bite -P cat -n

The dog bit the cat.

16 if -o-k kacaxi-t katti-N

dog-o-k bite -P cat -n

A dog (not a coyote) bit the cat.

17 if -o-k ommi-t waliika-k
dog-o-k be -P run -k
It was a dog (not a wolf) that ran.

The formal representation of these parenthetic remarks is -o-, which differentiates or distinguishes "dog" as the performer of the action.

The notion of "differentiation" is basic in the function of the demonstrative and indefinite pronouns, both of which occur wich -o-. The responses to indefinite pronouns used as interrogatives also appear with -o-.

18 akk-o-n ca-bann
that-o-n I-want
I want that one.

19 y -o-n ca -bann
this-o-n I -want
I want this one.

20 naas-o-n iis-pa-N
what-o-n you-eat-Q
What are you (sg) eating?

21 takkolcob-o-n iipa-l
apple -o-n eat-I
I am eating an apple.

22 naks-o-k ommi-N
who-o-k be -Q
Who is it?

23 tatk -o-k omm
white-o-k be
It is a white person.

-o- occurs also with the independent emphatic forms of the personal pronouns. There are special forms for the first and second persons; the demonstratives serve as third person emphatics.

24 an-o-k axxa-l-aN
I -o-k go -I-F
I will go.

25 kosn-o-k ama-hil-ka-lahoN
we -o-k go -we-go-F
We will go.

26 isn-o-n ci -hiica-li-t
you-o-n you-see -I-P
I saw you (sg).

27 akk-o-n in -talwa-hci
that-o-n "him"-sing -As
She is singing for him/that one.

The sense of differentiation in the personal pronouns is not as prominent as in the demonstratives and indefinites. However, the emphatic meaning of the independent forms of the personal pronouns is intensified by the idea of differentiation which is suggested by the presence of -o-.

I have used the terms "selection," "identification," "discovery," and "differentiation" in defining the meaning of -o-. There is a considerable area of shared semantics among these terms. They are essentially interchangeable if the nuances which make one or another of them seem more appropriate for a given context are ignored. The most general term is "differentiation" and it will be used to designate the entire semantic range of -o-.

-O-O-

In addition to -o-, a long or geminate -oo- occurs in Coushatta, sometimes contrasting with -o-, as in (28) and (29), or appearing in environments not shared with -o-, as in (30).

28 an-o-k axxa-l-aN oola-faN
I -o-k go -I-F town-L
I am going to town.

29 an-o-o-k axxa -l-aN oola-faN
I -o-o-k go -I-F town-L
I also am going to town.

30 an-o-o-t ommoN axxa-l-laahii-k nihtaN

I -o-o-t be go -I- -k tomorrow

I may be the one who goes tomorrow.

I will consider -o-o- to be a combination of two morphemes: the -o- of differentiation and another -o- whose meaning will be discussed below.

Before proceeding to an examination of the semantics of -o-o-, it is necessary to review briefly the functions of the morphemes -k and -t. In sentence (31)

31 filip -ka-t roy -ka-t akaamii-k amaaka-t oola-f-o-n

Philip-D-t roy -D-t "join" -k go -P town-L-o-n

Philip and Roy went to town.

-t suffixed to "Philip" and "Roy" shows that the two of them are acting together. In this sentence the sense of joint activity may be realized by their traveling in the same car. The suffix -k in akaamii-k indicates that others besides Philip and Roy may be involved, but the existence or the identity of other possible participants is not considered relevant in this statement. -t marks a close conjoining of two or more entities, -k does not. All the members of a group conjoined by -t are not necessarily mentioned in a statement. In sentence (32) it is understood from the presence of -t that "rabbits" may be only one of the animals which the dog attacks. -t in (33) indicates that the window opened may be the same one or any one of several in the room.

32 am-ifa-k cokf -o-o-t ibi-hc-oo-k

my-dog-k rabbit-o-o-t kill-As-oo-k

My dog kills rabbits.

33 okhica -s -o-o-t tiwap-li-hc-oo-k lokbaa-p

window-Dm-o-o-t open-I -As-oo-k hot -p

I open a window when it is hot.

The nouns suffixed with -o-o- are glossed as plurals in (34), and the meaning of -o- as differentiator of particulars is not apparent from this gloss.

34 am-ifa-k cokf -o-o-t ipx -o-o-t ibi-hc-oo-k

my-dog-k rabbit-o-o-t squirrel-o-o-t kill-As-oo-k

My dog kills rabbits and squirrels.

35 am-ifa-k cokfi -N ibi-hc-oo-k

my-dog-k rabbit-n kill-As-oo-k

My dog kills rabbits.

But a paraphrase of (34) reveals the presence of -o-: "My dog from time to time kills a rabbit and occasionally kills a squirrel also." Diachronically the results of the dog's killing individual animals are several dead rabbits and squirrels. The dischronic view is the prevailing one and the nouns are glossed as plurals.

The same shifting between perspectives is seen in (36).

36 yalaah-o-o-t takkolcob-o-o-t ipa-li-hc-oo-k niht-ooya-N

orange-o-o-t apple -o-ot eat-I -As-oo-k day -all -n

I eat an orange and an apple every day.

37 yalaaha-N ipa-li-hc-oo-k niht-ooya-N

orange -n eat-I -As-oo-k day-all -n

I eat an orange every day.

Here, "day" in nihtooyaN "every day" fixes the perspective on the synchronic plane and the nouns are glossed as singular. But there is also a diachronic view: the action occurs daily with the result that multiple items are consumed. It is this plurality of multiple particulars in (34) and (36) which is the meaning of the second -o- in -o-o-.

A variation of these ideas of "differentiation" and "multiplicity" is seen in sentences (38) and (39).

38 pacokkootk-o-o-t mat-an-k

chair -o-o-t -me-give

Give me a chair!

39 kopl -o-o-t mat-an-k

glass-o-o-t -me-give

Give me a glass!

The effect of the morphemes -o-o- is to make the request less specific, so that a quite dissimilar object is acceptable if it can serve the same purpose as the one mentioned. pacokkootkoot "chair" can also be appropriately glossed as "something chair-like, something to sit on" and pokloot as "something glass-like, something to drink from." In both sentences the goal of acquiring a single object is indicated by the first -o-. The second -o- shows that this object may be a part of a group of functionally similar entities, which are closely conjoined by the morpheme -t.

The combination of the -o- of differentiation and the -o- of plurality produces the gloss "also" in sentences (29) and (40).

29 an-o-o-k axxa-l-aN oola-faN

I -o-o-k go -I-F town-L

I also am going to town.

40 lan -o-o-t lis -o-o-t kos -lil -o-o-t akaamii-k amaaka-t oola -faN

Lana-oo-o-t Lisa-oo-o-t aunt-Lily-o-o-t "join"-k go -P town-L

Lana, Lisa and Aunt Lily also went to town.

As in the preceding sentences the -o- of differentiation focuses on the individual and the -o- of plurality indicates that more than one individual is involved. In sentences (40) the group is conjoined by the morpheme -t, while -k in (29) marks a looser association.

In all the occurences of -o- which have been presented, there is a recurrent semantic element which I have termed "differentiation of particulars." This term encompasses the notions of new information, indefiniteness, emphasis, focus and contrastiveness, which have been used to describe the function of -o- in other languages. One or another of these terms may appear to be more appropriate in a given context or with certain categories of words, but they can be considered as variations of the basic meaning of "differentiation." By utilizing this concept a single morpheme -o- can be established. Furthermore, the identification of its primary function as one of differentiation makes it possible to isolate -o- in the complex morpheme -o-o and to establish the meaning of its second constituent.

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I am grateful to Sally Battise for sharing her language with me. This project was supported by the Dean of Humanities and the Department of German and Russian, Rice University.

Abbreviations:

As : Aspect	L : Locative
D : Derivation	N : Nasalized vowel
Dm : Diminutive	P : Past tense
F : Future	Q : Question

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LA POLYSÉMIE ET LE VOCABULAIRE SPÉCIALISÉ ANGLAIS ET FRANÇAIS

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I Généralités: la polysémie en langue courante et en langue spécialisée

La polysémie, c'est-à-dire le fait d'avoir une seule forme graphique (ou mot) ayant plusieurs acceptions (ou sens), existe à la fois dans la langue courante et dans la langue spécialisée. En langue courante, la polysémie est notamment utile, soit pour créer volontairement une ambiguïté (recours bien connu des humoristes), soit pour donner un sens figuré à un mot. Par exemple, si nous disons, pour illustrer ce second cas, "cette jeune fille est une vraie perle et en plus, c'est une belle plante", il est sûr que nous transposons, par analogie, certaines caractéristiques de la perle, perçue par l'homme comme ayant de la valeur, au caractère de la jeune fille; de même, le mot "plante", renforcé par le qualificatif "belle", est transposé à la jeune fille pour désigner un physique agréable. Si, par contre, nous disons de quelqu'un que c'est une "plaie", nous transposons subjectivement les caractéristiques de la plaie, perçues généralement d'une façon négative par l'homme, au comportement d'un individu. Les exemples de ce genre abondent dans la langue courante et font intervenir le jugement subjectif de l'homme. Or ce genre de transposition existe également dans la langue spécialisée. Nous reviendrons sur ce point un peu plus loin quand nous aborderons le rôle de l'image dans le vocabulaire spécialisé.

II La polysémie et le vocabulaire spécialisé - définitions

Avant de poursuivre l'exposé, nous aimerions expliquer brièvement ce que nous entendons par "vocabulaire spécialisé". Le vocabulaire spécialisé s'applique à la fois au domaine scientifique et au domaine technique. Plus précisément, le domaine scientifique s'intéresse à la connaissance de la nature, qui peut être extérieure ou propre à l'homme (c'est le cas, par exemple, des lois en chimie ou en physique), alors que le domaine technique s'intéresse à l'utilisation de la nature dans un but pratique (l'application de lois chimiques ou physiques à des fins particulières, par exemple). Étant donné que le propre du vocabulaire spécialisé est d'être précis et objectif, l'ambiguïté intentionnelle qui peut se retrouver en langue courante ne doit théoriquement pas exister en langue spécialisée.

Par ailleurs, puisque nous traitons ici de vocabulaire spécialisé, nous touchons à ce que certains linguistes appellent "termes", c'est-à-dire des mots ou des syntagmes (groupes de mots) qui, lorsqu'ils sont rattachés à un domaine d'emploi, deviennent scientifiques ou techniques. Normalement, pour ces linguistes, et plus particulièrement la plupart des terminologues, le terme est figé et monosémique. Autrement dit, selon eux, la polysémie n'existerait pas et, dans ce cas, ils préfèrent parler d'"homonymie". N'oublions pas que la démarche du terminologue, contrairement à celle du lexicographe, est de partir du contenu sémantique d'un terme pour ensuite y rattacher une forme graphique. (Nous avons failli dire "une ou plusieurs formes graphiques"; "plusieurs" s'appliquerait aux synonymes, mais là encore, aux yeux de certains terminologues, la synonymie qui consiste justement à avoir plusieurs formes graphiques pour une seule notion, et qui est le contraire de la polysémie, n'est pas souhaitable puisque, idéalement, un terme ne devrait, selon eux, n'avoir qu'un seul sens.) Ces précisions apportées, nous verrons que la polysémie, lorsqu'elle est utilisée dans les domaines spécialisés, peut poser des difficultés au sujet bilingue; puis, nous analyserons quelques aspects de la polysémie telle qu'elle se présente dans le vocabulaire spécialisé anglais et français.

III La polysémie et les difficultés de traduction

Il existe des cas où le sujet bilingue, à cause de l'influence du mot de la langue de départ qu'il a à traduire, choisit un mot dans la langue d'arrivée qui ressemble morphologiquement au mot de la langue de départ. Nous nous rappelons d'un exemple précis à ce sujet. Quatre-vingt-dix étudiants de troisième année de traduction de l'université Laval avaient à traduire, il y a deux ans, en examen, un texte en psychologie portant sur la sexualité. Un des sous-titres se lisait comme suit: "On Sex and Love". Or les trois-quarts des étudiants ont choisi de traduire "sex and love" par "sexe et amour". Ce qui est intéressant, dans ce cas, c'est que l'aire sémantique de "sex" et de "sexe" n'est pas la même. "Sex" a une plus grande extension que "sexe" et comprend la "sexualité". Une question d'usage intervient également ici et "sexe", en plus d'être inexact parce qu'il est imprécis, fait beaucoup plus "cru" que "sex" dans ce cas. Les étudiants auraient dû traduire "sexualité et amour".

La polysémie présente d'autres difficultés pour le sujet bilingue qui doit consulter des lexiques bilingues ou multilingues ne comportant pas de définitions et qui peut, parce qu'il est pressé, choisir au hasard un des termes de la langue d'arrivée donnés comme équivalents d'une expression polysémique de la langue de départ. C'est par exemple, le cas de "condenser" qui a, dans la plupart des lexiques spécialisés, deux correspondants

français possibles, "condensateur" et "condenseur". Le sujet bilingue qui pourrait penser, un peu rapidement, que "condenseur" ressemble trop à l'anglais (c'est le cas inverse de l'exemple précédent qui se produit ici) et qui voudrait l'éviter en choisissant "condensateur" (ça fait plus "français"), peut faire une erreur car les domaines d'emploi, dans les deux cas, sont fort différents. Par exemple, "condensateur" peut s'appliquer à l'électrotechnique pour désigner un appareil permettant d'accumuler de l'énergie électrique, alors que "condenseur" s'applique au conditionnement de l'air. Le sujet bilingue devra choisir l'équivalent approprié en fonction du domaine dont traite le texte à l'étude. Et si le domaine d'emploi n'est pas clair pour l'usager, seule une analyse détaillée du contenu sémantique des deux termes "condensateur" et "condenseur" lui permettra de lever l'ambiguïté. Dans l'exemple que nous venons de citer, la difficulté, rappelons-le, tient au fait qu'il existe une expression polysémique dans une langue et des termes différents dans l'autre. Ici la polysémie n'affecte qu'une seule langue, l'anglais. Il s'agit d'une polysémie intralinguistique.

N'oublions pas que l'évolution des techniques justifie aussi, dans bien des cas, l'existence d'expressions polysémiques. En effet, le principe scientifique qui régit, par exemple, un engin peut rester le même au cours des siècles, mais l'application technique peut être différente et donner lieu à des appellations différentes. Prenons l'exemple de la "vis d'Archimède" qui peut être rendue de deux façons en anglais, suivant l'application que le dispositif a. (Nous sommes de nouveau en présence d'une polysémie intralinguistique, touchant le français cette fois-ci.) Quand la "vis d'Archimède" sert à élever de l'eau d'irrigation, pratique connue dès l'Antiquité et s'utilisant encore dans certains pays, l'anglais dit "Archimedes' screw". En revanche, quand il s'agit d'un engin servant au transport de matériaux granuleux, l'anglais parle de "screw conveyor", alors que le français garde "vis d'Archimède". Évidemment, l'engin rudimentaire est devenu plus perfectionné et, donc, le terme a pris un sens nouveau. Rappelons qu'il s'agit ici d'une extension de sens due au fait qu'une réalité scientifique trouve des applications techniques différentes.

Dans le même ordre d'idées, nous pouvons, dans certains cas, extirper d'une expression polysémique le sens général qui se particularise dans des domaines d'emploi différents. Par exemple, "induction" existe à la fois en anglais et en français avec exactement les mêmes sens (il s'agit ici d'un cas de polysémie interlinguistique où le mot a le même contenu sémantique dans les deux langues quel que soit le domaine d'emploi). Si nous analysons les diverses définitions données à "induction" en électricité, anesthésie et philosophie, en anglais et en français, nous découvrons un sens général qui s'applique aux trois cas. En électricité, la présence d'un corps électrique (cause) mène à

l'électricité (effet); en anesthésie, l'introduction d'agents médicamentaux (cause) mènent à la narcose (effet); enfin en philosophie, une observation (cause) donne lieu à une proposition (effet). Nous pouvons dire que, dans les trois cas, il existe un lien de cause à effet et le sens général qui se dégage est celui de "quelque chose qui mène à autre chose". Il semble que ce genre d'analyse peut apporter des éléments intéressants au lexicographe qui fait un dictionnaire scientifique et technique. En effet, le lexicographe peut d'abord donner le sens général qui se dégage de l'analyse du contenu sémantique de chaque terme polysémique, puis les sens spécifiques qu'il rattache, à chaque fois, au domaine d'emploi. D'une façon générale, l'indication systématique du domaine d'emploi, aussi précis que possible, dans les dictionnaires et lexiques (pas seulement sur des fiches terminologiques), tout en n'occupant que peu d'espace, peut contribuer à faciliter la compréhension de la notion à l'étude et éviter les erreurs de traduction.

IV Quelques aspects de la polysémie bilingue en langue spécialisée

Nous allons maintenant aborder quelques aspects particuliers de la polysémie bilingue en langue spécialisée consistant à transposer à un domaine d'emploi particulier des mots déjà existants dans la langue spécialisée ou dans la langue courante. Cette façon de procéder représente non seulement une économie, mais aussi un enrichissement de la langue. En sortant les mots de leur contexte habituel et en les plaçant dans un contexte appartenant à un domaine différent, le mot, tout en prenant un sens spécifique, devient concret et même pittoresque. Par exemple, les mots "bleeding", "blister", "blemish" ne surprennent pas en médecine, mais ils semblent inattendus dans le domaine de l'emballage; ils servent à désigner certains défauts du bois. Il s'agit, dans ce cas, d'emprunts interdisciplinaires qui concourent à rendre la langue spécialisée imagée. Ce genre de procédé se retrouve en anglais et en français.

En plus d'emprunter des mots appartenant déjà à un domaine d'emploi, le vocabulaire spécialisé peut même être formé de mots provenant de la langue courante familière, voire vulgaire. Quemada, dans "Technique et langage" (Histoire des techniques, vol. 41 de la Pleiade) donne les exemples de "chier" et de "dégueuler" pour désigner, dans le domaine de l'habillement, certains défauts d'un col.

D'autres emprunts existent, par exemple des emprunts au règne animal. En français, le "hérisson", petit animal au corps recouvert de piquants, se retrouve en mécanique, en outillage

agricole; il sert à ramoner les cheminées et à égoutter les bouteilles; en anglais, "hedgehog" peut s'appliquer au domaine militaire. Il peut être intéressant de noter que l'anglais et le français ne recourent pas autant aux mêmes animaux pour désigner des réalités techniques. Le corps humain a également beaucoup contribué à la création de mots techniques ("pied" s'applique à un grand nombre de techniques dont la menuiserie et la mécanique; il en est de même de "foot"). Le vocabulaire technique se rapproche ici du vocabulaire courant dans l'utilisation qu'il fait de la polysémie pour frapper l'imagination de l'homme.

V Conclusion

En conclusion, nous pouvons dire que

1° la polysémie existe en langue courante et en langue spécialisée, mais si le contexte sert, en principe, à lever toute ambiguïté en langue courante (à moins que l'ambiguïté ne soit voulue ou qu'elle découle d'un manque de rigueur de la part de l'auteur), en langue spécialisée, le rattachement au domaine d'emploi suffit bien souvent à jouer ce même rôle. Notons qu'en langue courante, le domaine d'emploi est difficile à déterminer et, la plupart du temps, il est même inexistant. Si nous revenons à l'exemple de la jeune fille qui est comparée à une perle ou à une belle plante, seul le contexte (les mots environnants) permet de déterminer le sens à donner dans ce cas à "perle" et à "plante". Citons les propos de D. Seleskovitch et de M. Lederer à ce sujet (p. 17): "Polysémie et ambiguïté sont caractéristiques de tout assemblage de mots hors contexte, elles disparaissent lorsque la phrase est placée dans le fil de son discours." Il en est de même de ce qu'on pourrait appeler la "fausse polysémie" et qui, en langue courante, touche des mots qui n'ont véritablement de valeur que lorsqu'ils sont associés à d'autres mots. Zgüsta (p. 68) cite l'exemple de "to take" dans "to take offence", "to take a wicket", "to take sides", "to take someone's meaning". Le verbe "to take" n'a de valeur qu'à cause des mots qui l'entourent. A ce propos, Zgüsta cite Weinrich en disant ce qui suit: "in expressions like these, the verb functions as little more than a verbalizer, not entirely unlike -ize and other affixes".

2° La polysémie constitue une ressource de la langue spécialisée extrêmement riche et dynamique qui concourt à rendre le vocabulaire spécialisé imagé (c'est notamment le cas du rapprochement avec le règne animal et le corps humain).

3° En dernier lieu, nous aimerions faire remarquer que, pour des raisons d'économie, il est souvent préférable d'avoir recours à un mot qui existe déjà pour désigner une nouvelle

réalité dans un domaine spécialisé, plutôt que de créer un terme nouveau morphologiquement.

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KINSHIP TERMS AS VOCATIVES IN RUSSIAN

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Kinship terms (KT) are widely used as vocatives in Russian. However, few studies have been made on this phenomenon.[1] In this paper I intend to provide some insight into the variety of functions that KT as vocatives perform in modern Russian. I shall analyze some of the most commonly used KT denoting genealogical links, e.g. "mat′" (mother), "otec" (father), "brat" (brother), "sestra" (sister), "syn"[2] (son), "doč" (daughter) etc. along with their situational variations.

The primary function of these KT as vocatives in their basic meaning (i.e. when they denote the genealogical relationship between the addresser and the addressee) is to identify the addressee. In this their function is similar to the standard Indo-European vocative. KT "mat′" in Pavel′s utterance "Proščaj, mat′" (Mother. M. Gorky) would perform the same function when translated into different IE languages, e.g.:

Good Bye, mother! (English)
Adios, madre! (Spanish)
Do vidjenija, majko! (Serbian)
Biday, ma! (Bengali)

In other words, the vocative "mother" is used in all these IE languages primarily to specify the addressee in discourse.

Russian KT like in many other IE languages (e.g. father, dad, pop, old man in English; padre, papa in Spanish; otac, tata, etc in Serbian; Pita, baba etc. in Bengali) are often characterized by the presence of alternate terms or situational variations, many of which include hypocoristic suffixes (HcS), a common phenomenon in Slavic languages. Thus KT "otec" (father) has its situational variations "papa", "batja", "batjuška", "papaša", "papen′ka" etc. The function of these alternate terms, as we know, is to add some extra dimensions in the componential definition of the word - male, senior linear nuclear family (Nogle, 1974:49). Used as vocatives they function as indicators of those added extra dimensions:

Otec, ja vinovat, prošu proščenije.(indicates respect to the addressee)
"(Father) I am guilty. I ask for your forgiveness."[3]

Papa, pojdjom na rybalku? (indicates an informal relationship between the speaker and the addressee)
"(Papa), shall we go fishing?"

Papočka, kupi mne moroženoje, požalujsta! (indicates an affectionate relationship)
"(Papa + HcS), please buy me some ice cream."

Our special attention in this paper is focused on KT with total or partial loss of their semantic content (i.e. where they no longer denote any kind of genealogical relationship between the speaker and the addressee).

With partial semantic depletion these KT have a much wider, rather universal usage, where the age of the addressee plays the most important role. As a result they have more denotata than KT in their basic meaning. Thus "mat'" (with its variations) can be used to address any elderly woman:

Ty sama vinovata, matuška, esli ne umela vnušit' synu uvaženije k bogu i carju.
"You are to blame (mother + HcS), if you could not teach your son to respect God and Czar."

"Djadja" can be used to address a grown-up male:

Nestojnyj i negromkij vzryv vosklicaniji zaglušil golos ego. - ne spor', djadja! tut načal'stvo.
"A dissonant and loud burst of exclamation muffled his voice - don't argue, (uncle)! These are the authorities."

"Brat" is used as an informal and friendly address to a grown-up male with whom the speaker belongs to the same age group:

Smotri, brat, šuti v meru!
"Watch out, (brother) don't joke too much!"

"Syn" and "doč" can be used by elderly people to address children and young people:

Synok, košeljok, kažetsya, uronili vy.
"(Son + HcS), looks like you dropped your wallet."

-Skažite, požalujsta, gde tretjij podjezd ?
-Da vot, sledujuščij, dočen'ka.
"-Would you tell me where is the third entrance?
-The next one, (daughter + HcS)."

According to the established standard of speech etiquette, the absence of a vocative in Russian makes an utterance impolite, even rude (Akisina, 1975:5). A typical conversation on the street would confirm the above theory:

-Peredajte mjaček!
-Vot segodnjašnjaja molodjož! obraščat'sja-to nado by, synok. A volšegnoe slovo-to zabyli?
-Oj, izvinite, tjotja. Peredajte mjaček, požalujsta.
-Vot tak lučše.
"-Pass the ball!

-There you are, today's youth! How about an address, (Son + HcS), and did you not forget the magic word?
-Oh, excuse me, (Aunt). Please pass me the ball?
-Well, that's better."

In present-day Russian society it is customary to address a person by the name and the patronymic (if the addressee is known to the speaker) or by the conventional names (if the addressee is a stranger to the speaker), e.g. "tovarišč" (comrade), "graždanin/graždanka" (citizen), "devuška" (young lady), "molodoj čelovek" (young man), "gospodin/gospoža" (Mr./Mrs).

But all these words as vocatives are far from being satisfactory to the communication needs of all speakers in every situation. This is why they are so often replaced in conversation either by some expressions of speech etiquette, e.g. "prostite", "izvinite" (excuse me), "bud'te dobryj", "bud'te ljubeznyj" (be kind), "vy ne skažite" (wouldn't you tell me), "vy ne znaete" (wouldn't you know) etc. or by KT:

Graždanin, peredajte, požalujsta, bilet!	(Citizen/Be kind/
Bud'te dobryj, peredajte, požalujsta, bilet!	Son+HcS) please
Synok, peredajte, požalujsta, bilet!	pass the ticket!

KT here are really the functional equivalents of the conventional names and expressions of speech etiquette, both of which help the addresser to get into the channel of communication with the addressee, to establish a certain kind of communicative contact and hence to perform the function of social etiquette.

KT in their universal usage have already set up the following substandards of speech etiquette in the speech community:

1. In rural areas KT are more widely used (than proper names or conventional names) to address a stranger as well as a non-stranger:

Nu čto, pojdu ja, djadja Stepan, skazal Egor. (a grown-up addressing his neighbor)
"Well I will go, (uncle Stepan), said Egor."

Djadja šofjor, požalujsta, podvezite mne domoj. (a 20-year old girl addressing a taxicab driver)
"(Uncle chauffeur), please take me home."
The above can be compared with the vocative in the following conversation that is taking place in a city between a taxicab driver and a young girl:

Tovariščˇ taksist, podoždite, požalujsta, ja sejčas vernus'.
"(Comrade taxi driver), would you please wait? I will be back soon."

Ty už razjasni mne, synok, ne molči. (defendant's mother addressing a court employee)
"Explain to me (son + hcs) please, don't keep quiet!"

Mat' ponjala, čto ètot ne vzlyubil ejo syna - batjuška, a vyše-to tebe est'

kto? - Est' mat'. (continuation of the above conversation)
"Mother understood, that this man did not like her son, (father + HcS)
there must be somebody superior to you. -Yes, (mother), of course."

Čto, brat, nedavno čto-li priexal na selo naše?
"So, (brother), are you a newcomer to this village?"

2. "Syn" and "doč" are widely used by old people in the village as well as in the cities to address children and grownups.

Dočen'ka, ty ploxo vidiš? (to a little girl)
"(daughter + HcS) you can not see well?"

Synok, pomogi, požalujsta, dorogu perexodit'. Ya slepoj. (to a little boy)
"(Son + HcS) please help me cross the street."

Ustupi staromu čeloveku mesto, synok!
"Give up the seat for the old man, (son + HcS)!"

Dočen'ka, kakije xorošije deti vaši.
"(Daughter + HcS), how wonderful your children are!

3. KT as vocatives are most extensively used in children's speech for strangers as well as non-strangers:

Tjotja Tanja, èto počemu ljudi umirajut? (to a neighbor)
"(Aunt Tanja), why do people die?"

Djadja Borja, ty ne ženat? (to a recent acquaintance)
"(Uncle Boris), are you not married?"

Djadja, čto zdes' proizxodit? - film snimajetsja (addressee is a militia man)
"(Uncle), what is happening here? - Shooting a film."

Djadja, ty ne slepoj? -Ja slepoj, kogda nado! (to a recent acquaintance)
"(Uncle), are you not blind? - Yes I am, when I need to be!"

Babuška, ne našli dom? (to an unknown old woman)
"(Grandmother), (You did not find out the house?)"

Deduška, tebe tjaželo xodit'? (to a neighbor)
"(Grandfather), do you find it hard to walk?"

4. A Number of KT (e.g. "djadja", "tjotja", "babuška", "deduška") is found in Russian in foreigners' speeches. As we know, in the process of acculturation it is inevitable for an individual to be influenced by the elements of his own culture. Thus, KT are often used by in the speech of foreigners, especially of those who originally belonged to a culture, where to address an elderly person by his or her first name is an absolute taboo, and it is not customary to use the conventional names. The use of KT help them to avoid the culture shock to a great extent. That is why often Marija

Ivanovna, Tatjana Borisovna etc., are "tjotja Maša" and "tjotja Tanja" and Nikolaj Borisovič or Ivan Ivanovič are "djadja Kolja" or "djadja Vanja" in a foreigner's speech. The same way in a public transport in a foreigner's speech we often hear:
Babuška, vy sejčas vyxodite?
"(Grandmother), are you getting down here?"
or
Deduška, sadites'!
"(Grandfather), have a seat!"

In modern Russian we come across a number of KT that have lost their semantic content altogether. KT "mat'", "brat", "otec/batja" are often used without any rememberance of the original meaning. Because of this semantic depletion they do not quite perform the function of real vocatives (even though traditional grammar identifies them as vocatives). Most of these so-called vocatives are found in long utterances. They are interpositional and have a very less distinct intonation.

Ty na obed sostroj pelmeški, Tanja, po-bol'še svininki položi, i znaeš podžar i čutočku, čtoby oni, mamočka, smotreli na menja iz tarelki... (addressee is the speaker's wife).
"Make dumplings for lunch, Tanja, put more pork and fry them a little, (mom + HsC), so that they would look at me from the plate ... "

Nu ty dajoš, otec, kak v kino. Serjzno govorju, mat'. Tak možno rasryv serdca polucit' ! (addressee is a militia man)
"You are quite something, (father), just like in the films. I am serious,(mother), one could get a heart attack like this."

Mne, brat, i bez tebja skučno, - to est' esli ty - vesjolaja, a tak ne skučno. (addressee is a woman)
"I feel bored even without you, (brother), that is, when you are jolly ... or else not ..."

Vrjoš, ja ne pijanyj, a ustal ja. Ja vsjo xodil i dumal...ja, brat, mnogo dumal... (addressee is a woman)
"You are wrong. I am not drunk. I am just tired. All along I was walking and thinking...I, (brother), did a lot of thinking..."

Nu i čudnaja pogoda! Na rybalku čto-li, brat, nam stoboj pojti? (addressee is the speaker's son)
"Well, what a wonderful weather! Should we, (brother), go fishing?"

Nu, Nu, Nu. Sovsem rasxvoralsja, otec, ty u menja! (addressee is a little boy)
"Well, I can see that you, (father), are absolutely ill !"

We assume that in the above cases due to their semantic depletion KT do not have any real denotata. As a result they can not really identify the addressee and therefore do not perform the function of vocatives. In the communication process they primarily perform the phatic function. They are used to check whether or not the channel of communication is working

(Jacobson,1966: 366). These KT, therefore, are similar to some of the emphatic particles (EP), e.g. "nu" (well), "že" (indeed), "ved'" (in fact), that have a referring tone and function as English connectors like, "mind you", "in fact", "I mean to say", etc. (Monaghan, 1981:422).

In their functions these KT are also similar to certain swear-words (SW) which have essentially been depleted in terms of their semantic content and function as attention-getters. KT along with the EP and SW as the system of ritualized formulas often are used together to hold the addressee's attention in order to continue or to break up the communication channel which has already been established.

Sukin ty syn, varnak okayannyj, vslux negromko rugalsja on. - Uxodi, pes s toboj, a ružjo-to, brat, nu čto ja tut bez ruž'ja, brat, delat'-to stanu, ty podumal svojej baškoj?
"(SW), (SW), he was swearing not so loudly. - go away, (SW), and what about the gun...(EP), (KT), (EP), what would I do without the gun ... (EP) (KT), did you think with your stupid head?"

In conclusion, I would like to make the following points:

1. KT as vocatives with their partial semantic depletion have many more denotata than KT in their basic meanings. These KT in modern Russian partly perform the function of social speech etiquette.

2. KT with total semantic depletiion do not have any real denotata and therefore can not function as vocative (identifier of the addressee). And it is about time we thought of reconsidering the syntactic status of the so-called vocatives.

NOTES

1. The problem of KT as vocatives has been dealt with by Soviet linguists E. J. Korotajeva and A. I. Moiseev in their works mentioned in the bibliography. However, both of them have considered the problem from an etymological point of view.

2. This paper is based on the data collected from various novels and short stories of M. Grorky and V. Shukshin, some feature films and spontaneous conversations.

3. The English translations of the Russian texts are mine. The purpose of the English translation is to provide the reader with some idea about the context of the utterances.

4. The term "conventional name" is a translation of "obščeupotrebitel'noje imja" (Grammatika russkogo jazyka, 1954:123).

5. The term "ritualized formula" is borrowed from R. Jacobson (1966:368).

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VII

STYLISTICS, DISCOURSE AND TEXT STUDIES

ON DEFINING POETRY*

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1.0 Introduction

When reading the works of contemporary poets one is tempted to offer the following minimal definition of modern poetry: prose written in groups of lines, with *some* lines shorter than the right edge of the page and usually with the first word of each line (or each group of lines) beginning with a capital. Other traditional features of poetry such as rhythm and rhyme no longer seem to pertain to the majority of the poems being published today.

When I first encountered the poems of Sietze Buning[1] I felt that the above definition fit them very well. That is, his poems seemed to be natural, normal pose, written in the format of a poem but with no other formal poetic features. The style was that of an author chatting informaly with his reader. However, upon closer inspection, it became obvious that Buning's poems do not, in fact, comprise good prose. In this study I will present evidence to support that statement. (It is my contention that if indeed these poems did follow all the rules of English prose, they would be poor poetry.)

2.0 The Poetry of Sietze Buning

2.1 General Discussion

Buning's poems, in both Purpalaenie and *Style and Class* leave one with the impression that one is reading an informal letter from a friend who is recounting his early childhood in Iowa, his years growing through adolescence and his current thought on life, love, and whatever. But upon studying them more objectively one finds not only a considerable use of traditional poetic devices but, more surprisingly, a number of non-prose features. That is, many of the poems would be judged as bad prose, in that a number of prose rules, especially discourse rules, are frequently broken.

2.2 Traditional Poetic Features

2.2.1. Rhythm and Rhyme

Two features of traditional poetry which occur in Buning's poems--rhythm and rhyme--are usually so unobtrusive and subtle that the reader is often unaware that they are present. However, especially on reading the poems aloud, one hears frequently some rhythm and is aware of an occasional end-line agreement

(sometimes via exact repetition and sometimes by partial rhyme in addition to full rhyme).

For instance, in the 4th stanza of Wilhelmina (*Style and Class* [hereafter S&C] 17) the word 'smile' occurs at the end of the second and fifth lines (in fact the entire fifth line is a repetition of the second):

> until the queen herself
> without a smile
> raised her finger bowl and drained it
> obliging all the courtiers to follow suit
> without a smile[2]

Notice, also, that the third and fourth lines in the above excerpt end in 't'. Sequential lines in Buning's poems end in the same sound much more often than by chance, although the lines generally do not rhyme in the conventional sense.

Another striking example of the agreement at the ends of lines occurs in Hull Humanity (S&C, 35, second stanza, lines 2, 3, 4 and 9-10):

> Right in style,
> I threw the sandwich I had swiped from him. He reached,
> missed,/[4] and the waxed paper burst apart
> against the lunchroom window.
> A smear of mayonnaise streaked the glass,
> a flap of bologna hung over the back of a desk,
> a lettuce leaf and a tomato slice lay on the floor.
> I smiled triumphantly,
> the boys' lunchroom laughed adoringly,
> and then we heard Mr. Leonard's voice.

Three alternating lines in An Open Letter (S&C, 57) end in elevator, refrigerator and incubator.

Another instance of end-line repetition is found in Other Clothes (S&C, 75):

> By eight
> I realized Mother's fashions for shopping
> followed Dad's.
> She did not change her cotton housedress
> to shop in Middleburg.
> Changed to a clean cotton housedress
> to shop in Sioux Center,
> and changed to a cast-off Sunday silk dress
> to shop in Orange city.

In More Bargains (S&C, 88-89), the words 'choice' and 'horse' occur at the end of 11 (out of 39) lines. In addition, the word 'bid' occurs at the end of 3 lines. The end-line agreements here often occur in pairs--but the pattern of other occurrences is not discernable.

Other rhymes occur in Henry Beets in Rudyard (S&C, 38)--Electras-Leicas and outfit-pulpit; in Purpaleanie (Twelve) (Purpalaenie and Other Permutations [hereafter P&OP] 85-86), there-near, all-Paul, and, notably,

complex-
ity of
sex.

Rhythm is not as evident--but does occur occasionally. For example, in Bells (S&C, 22-23) the following excerpt has a distinct lilt to it:

I hadn't, so he showed me
up to the balcony,
through a trapdoor,
up a winding stair, and there was the bell

And in Kyrie (S&C, 26) the following lines occur:

As far as I can judge
The baroque style is pretty much
  whippity whuppity whippity
  whuppity whippity whippity

  . . . . . .

Dad liked it no better.
It was all "BOOM
b-boom b-boom boom."

  . . . . . .

It was worst of all
"Azzzzzzzzzzzzzzz
 mmmmmmmmmmmmmmm
 zzzzzzzzzzzzzzz

Less obvious rhythm occurs in lines such as:

for his parents to take comfort
in the doctrine of the Covenant.

(Taking Death in Stride, S&C, 45)

A hint of rhythm is also seen in:

carefully out of the front door
carefully down the front steps
carefully toward the waiting station wagon

(The Edgerton Fern, S&C, 37)

and in:

> the door creaked open
> the lights blazed
> the chord sounded
>
> (Auld Lang Syne P&OP, 36)

2.2.2. Repetition

Probably the most frequent poetic (and non-prose) device used by Buning is that of repetition.[3]

Instances of Buning's use of repetition abound in almost every poem. In Bells (S&C, 22-23) the words 'bell' and 'bells' occur often, as in the following:

> He did it because all love is election.
> Somebody from the next generation
> would need to be interested in bells
> or bells would go the way of tails.
>
> As bells have.
> I moved away and attend a church without a bell.
> Bells are out of style.

Three consecutive stanzas (consisting of one sentence each) in Competence (S&C, 94) end in the word 'either' (and that word is written as the only item in a line).

The final stanza of Sietze sees Dominie about a Sermon (S&C, 16) reads:

> That day, maybe I had some class.
> That day, I was a little like a king.

Repetition also occurs in various places in the Edgerton Fern (S&C, 37)--one already cited above. It is also seen (watered it, transplanted it, planted it; pot, pottery), in the second stanza and G-G at the beginning of the third:

> Of all the younger ferns,
> none was so thriving as Grandma's own.
> She watered it twice a week
> and transplanted it every other spring,
> but always planted it back in the old pot,
> a big one of green-glazed pottery.
> the same pot that had been her mother's.
>
> Time came for Grandma Groen to move...

Repetition of whole or partial phrases throughout a poem is common. For instance, In Election (S&C, 63-64) the following non-sequential lines occur:

So much for outraged innocence.
So much for my mistrial.
So much for self-pity.

Each of these lines is separated by spacing from the rest of the poem.

And in Above the Mean (S&C, 90-91) five successive lines begin: she directed, she entertained, she sang for, she entertained, she taught. Also, in Two Dykstras (S&C, 95-99) three successive lines begin 'Suppose everyone had.' 'You won't have to cross Jordan alone' occurs seven times in Country Wedding (S&C, 24-25).

In Where the Tree Falleth There Let it Lie (P&OP, 23-24) the title is repeated at the ends of five stanzas.

2.3 Non-Prose Features.

The "traditional" poetic features mentioned above are not, of course, features of prose. What is more pertinent is that their occurrence (as well as the occurrence of other features mentioned below) in prose would make for unacceptable, bad, or bizarre prose. From a linguistic viewpoint, one major non-prose group of features in these poems is the occurrence of items which do not follow the normal cohesion rules of English prose (see Halliday and Hasan, 1975). For instance, the repetition already mentioned in Sec. 2.2.2, although often unobtrusive and charming in the poems, would normally be avoided in prose via ellipsis, substitution, and various other anaphoric devices. The excerpt from Other Clothes, cited in the previous section, is an illustration of this. If this excerpt were written in prose, 'housedress' would probably not occur twice, but some sort of substitution such as 'the same outfit' would be used. This substitution, however, would not be as "poetic" as is Buning's wording.

The phrase 'Our Martha' would, in prose, undergo some sort of anaphora in the following:

Our Martha
loved unwisely.
Our Martha must keep
the baby. Our Martha
so repentant, so sensitive

(First Lesson in Rhetoric, P&OP, 41)

'Our Martha' also occurs three more times in the succeeding stanza.

Some other features which show that Buning's poems are not prose follow.

2.3.1. Syntactic Order

The syntax of many sentences in Buning's poems would be, at the least, unusual in prose and, at times, unacceptable in it.

For example, in Election (S&C, 63-64), one stanza reads:

> The six girls in our one-room country school
> were dismissed, and the five boys--
> two older and two younger than I,
> and I in fifth grade--were left behind.

The phrase 'and I in fifth grade' would be unusual or awkward in prose--more common would be 'in fifth grade' (omitting 'and I').

More common is the topicalization (and initial position) of various parts of sentences--which do not occur in their more frequent later positions. Such positioning occurs in these poems, in spite of the fact that it is not discourse-mandated. The following are such instances:

> "Write on a piece of paper," the teacher said
>
> (Election, S&C, 63-64)

> Into old age
> Mother claimed Tillie as a star in her crown,
> flying in the face of all Dad's evidence
>
> (Tillie, S&C, 30)

> To Grand Rapids once they came
>
> (Taking Death in Stride, S&C, 46)

> Elected but not guilty
> I ran home, the copying done
>
> (Election S&C, 63)

The blurbs at the beginnings of sections of S&C are notable for this type of order--e.g., the first sentence of the introduction to the section entitled Letting the Terms Go (S&C, 51):

> *Overheard after a* Style and Class *Reading*
> "To put the labels *style* and *class*
> in every single piece
> is style.
> Class
> would let us figure some out
> for ourselves."

(In addition, the infinitive phrase 'to put' would be awkward in prose.)

Some instances of other inversions are:

> "Imagine," Mother said, "home grown!"
>
> (Home Grown, S&C, 49)

Midway between the house and station wagon
the bottom of the pot dropped out
and the sides collapsed

(The Edgerton Fern, S&C, 37)

Often incomplete sentences occur:

Teacher's footsteps from desk to desk,
the unfolding of paper,
and afterwards:
"Sietze,
you will stay to write five-hundred times
'I will be pure in thought, word, and deed.'"

(Election, S&C, 63)

As bells have.

(Bells, S&C, 23)

Why Kees Mouw and Marian Hospers and BD Dykstra
all in Orange City?

(Guest, S&C, 105)

To the bedroom
with my mother when she dressed.

(Purpaleanie--Seven--P&OP, 79)

Quotes are often introduced suddenly into a poem without any transition or introduction via, e.g., a quotation formula--a practice that would not be acceptable in prose:

She taught a dozen students voice lessons
("No more than a dozen--it interferes with my personal
life"),
one of whom was I,
from the time my voice changed until I left for college.

(Above the Mean, S&C, 91)

In Why Freedom Wouldn't Ring (P&OP, 67) one quote is introduced by "muttering" but a second similar quote has nothing before it.

Other unusual sentences occur:

Dad was disconsolate between Mother and me,
the first time I had seen him disconsolate.

(The Consistorial Conference, S&C, 62)

Planning the first meeting for October
required an afternoon meeting of the founders

in our living room on a July afternoon

(ibid, 60)

At times, modificational items, or descriptions do not occur next to the items being modified, producing what would be inacceptable prose:

Mother and Aunty kissed me goodbye in the house,
dry-eyed.

(Basic Training, S&C, 110)

The Orange City boys were traditionally straight arrows,
abhoring sin.

(ibid, 111)

To Grand Rapids once they came
where the front page of the daily Press
was a boiling cauldron of unholy hatreds.

(Taking Death in Stride, S&C, 46)

but he wore pressed trousers with a belt...
to Orange City
with, of course, a tie.

(The Tie, S&C, 74)

2.3.2 Vocabulary

Newly-coined words frequently occur in Buning's poems--e.g., Dutchness, Sioux-Centerness and Orange-Cityness in Above the Mean (S&C, 90), whippitty, whuppity in Kyrie (S&C, 26), whyever in Shivaree (P&OP, 17-18), and many others.

Words are also used in unusual ways, e.g., the town name Ames (in An Open Letter, S&C, 55-59) is at times personified (What would Ames have said?) at times a philosophy (Beware, beware of Ames), and at times a way of life (Now weed commissioners...were Ames). These would not fit well into prose without some accompanying qualifying statements.

The word 'else' is used oddly at the end of Strange Religion (P&OP, 37):

...a chain
that could have gone on
for a thousand
generations
else.

3.0 Completeness in Poetry and Prose

In a recent paper given at the Georgetown Linguistic Roundtable in June, 1985, Haj Ross remarked that poems, like the universe and, like language, are complete entities. One might argue, of course, that segments of prose (e.g., stories, books,

articles) are also "complete". Yet there is a sense in which prose segments are generally sequential, while poems are (at least much more often) circular. Poems often present one world viewpoint in a conclusive way. Perhaps this is why poems are so often satisfying--the reader feels that some type of completeness has been gained. Prose seems to be much more open ended. That is, in prose, although, for example, an episode may end, one often wonders what would happen next. The poet, however, often just wants to make a point, and once it is established, he stops writing.

Buning's poems are no exception. Often the last line states the point of a preceeding, somewhat vague, discussion or description. Note, for example:

> At state occasions, royalty is not amused
>
> (Holy Water, S&C, 21)

> I was called.
>
> (Bells, S&C, 23)

> The courtiers had style
> but Queen Wilhelmina had class
>
> (Wilhelmina, S&C, 17)

The first and last stanzas of Two Dykstras (S&C, 95-99) contain the same facts (with an addition in the last stanza). The last stanza completes the first (with much information occurring in between).

4.0 Format

In modern poetry, format is often of immense importance. (Here again, is a distinction between poetry and prose.) The length of lines often provides rhythm and rhyme--albeit spasmodically. For instance, in War and Peace (P&OP, 21) Buning ends three consecutive lines with Weather, Whoever, and deliver. The word 'Or' is highlighted via format five times in Excommunication (P&OP, 55).

Format seems to play a most important role in Buning's Afternoon with Eliot--Part X (P&OP, 122-23) where lines consisting of single words are staggered like stair steps.

One stanza in Diplomacy (P&OP, 60) seems to resemble an hour glass with the sand running out:

> "Well Asa, those were certainly
> foolish things for me to
> preach. I'll try to
> be more careful.
> Bear with me.
> And now we
> consider

the case
closed,
Asa."

The reasons for the specific formats of Buning's poems could constitute the basis of another extensive study.

4.0 What is a Poem?

What then, is a poem? Or, more specifically, how can we characterize the poems of Sietze Buning? Rules and precise definitions have not been found. But, as shown above, the poems are not prose. Cohesion rules are often broken--with esthetic results. It is clear, however, that the rule "anything goes" does not apply. Although this study has resulted in a definition that is primarily negative, some positive features have appeared. More may become evident with further study.

ENDNOTES

*For this presentation I have limited myself to two volumes of poetry by Buning, published by the Middleburg Press of Orange City, Iowa (see References). I am grateful to the Press for permission to reprint all excerpts quoted here.

[1]Pen name for Professor Stanley Wiersma of Calvin College.

[2]I will occasionally read an entire poem or a large excerpt from a poem--the reader will lose much of the rich enjoyment of this poetry if the larger contexts are not consulted.

[3]Of course repetition is possible within prose--used for emphasis or as a special effect--such as "He went far, far away". However, it seems to me that the normal prose would be "He went very far away" and that the "far, far away" phrase is really an insertion of a poetic form into prose.

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Relational Networks and Kant's Critique: Some Parallels

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0.In the Critique of Pure Reason Kant presents his own principled analysis of the human cognitive system and examines the structure of human understanding. But in the Critique Kant has very little to say about speech and for this reason has sometimes been criticized for neglecting the role of language in his epistemology. Despite this apparent lack of concern with language, there are many heuristically important parallels between Kantian operations of human knowledge and the relational constructs that are currently posited in studies of linguistic discourse.

1.Studies of discourse have required, among others, such paired distinctions as domain/particular, reference/realization, signifié/signifiant, constancy/variation, structure/process, universal/specific, and creation/activation. I want, first of all, to review briefly some of these notions with the aid of graphic illustrations, and then to consider some of their counterparts in Kant's theory of knowledge. I will, of course, within the format here, be able only to outline some of the many points of correspondence, along with the mention of others.

1.1. Domain/particular. The diagram in Figure 1 illustrates a method of conceptualizing a small fragment of the taxonomic hierarchy of knowledge in semology. The semological DOMAIN, S/DOG/ has intensive properties like S/ANIMATENESS/, S/TAMENESS/, and S/CANINE/ associated with it. Other intensions would include,

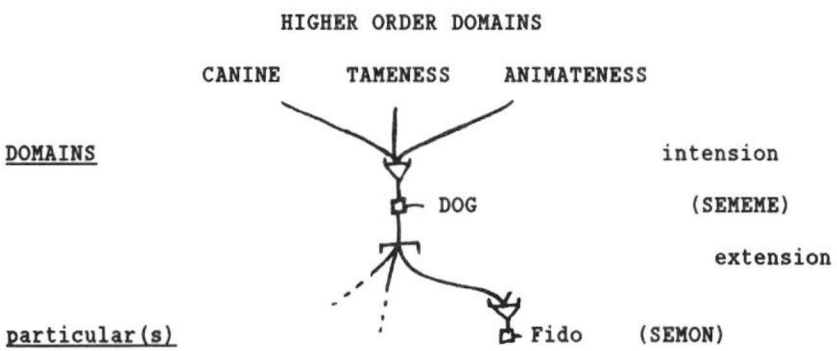

Figure 1
DOMAIN AND PARTICULAR

for example, parts of the whole, as well as typical activites of dogs. Also shown is that one of the extensions of the sememe is the semological particular (semon) SN/Fido/. There are as many potential semological particulars under this DOMAIN as there are dogs to be perceived or imagined.

1.2. Reference/realization. Figure 2 represents an elaboration of Figure 1 to include the reference of the semon SN/Fido/ to a particular sensible object in the external world. Also shown are the lexomorphemic realizations of the sememe S/DOG/ and of the semon SN/Fido/. A DOMAIN concept (sememe), in this sense, has no reference; a particular concept (semon) has no extension; both have realization(s) in the subsemological linguistic system. The morpheme M/dog/ as the realization of the semological domain S/DOG/ shows neutralization (syncretization) in that it may also realize the particular SN/Fido/, whereas the morpheme M/Fido/ only realizes the particular, not normally a DOMAIN.

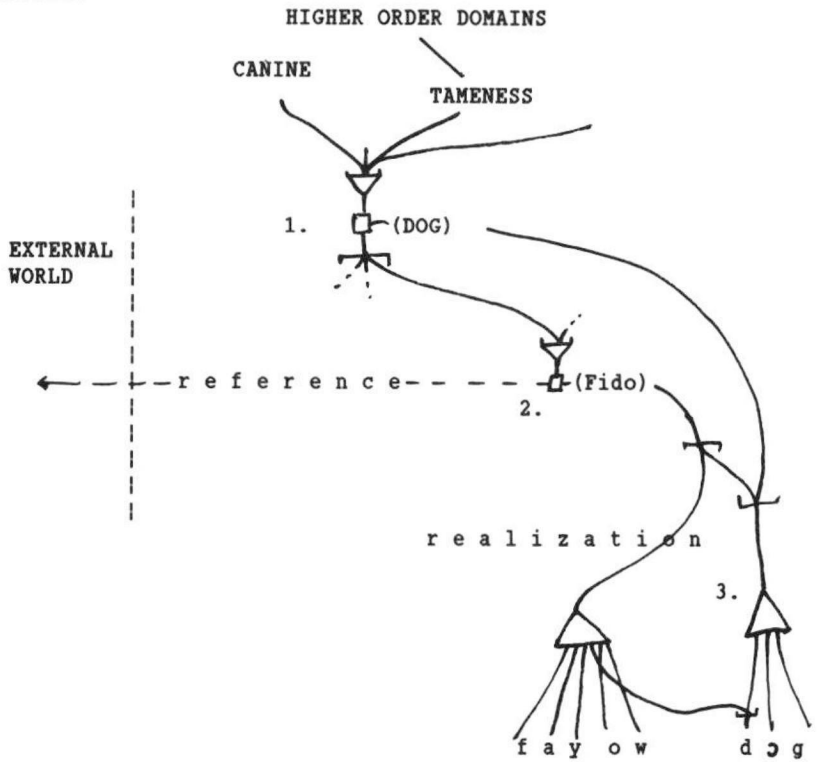

Figure 2
REFERENCE AND REALIZATION

1.3. Signifié/signifiant. This distinction describes the classical linguistic sign. But Lamb and others have often correctly insisted that the Saussurean sign be stratified, i.e., pulled apart to reveal a more complex structure between the signifié and the signifiant than was contained in the Saussurean sign. The linguistic sign then takes the form of a relational network that describes a content realized by an expression; an expression that in turn functions as the content of a further expression. This aspect of the linguistic sign is taken by Halliday to be a primary distinctive feature of semiotic systems in general. In precisely this sense the sign can be characterized as being 'stratified', hence stratificational linguistics. Figure 3 shows the classical Saussurean sign, and Figure 4 illustrates a partial reticulum representing the same sign, showing at the top a semological content, with its referent, its DOMAIN representation and its particular representation. lower in the network is the grammatical expression M/dog/, a morpheme that in turn serves as the content of a phonological expression composed of three phonemes, P/d g/.

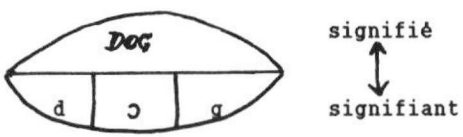

Figure 3
SIGNIFIE AND SIGNIFIANT

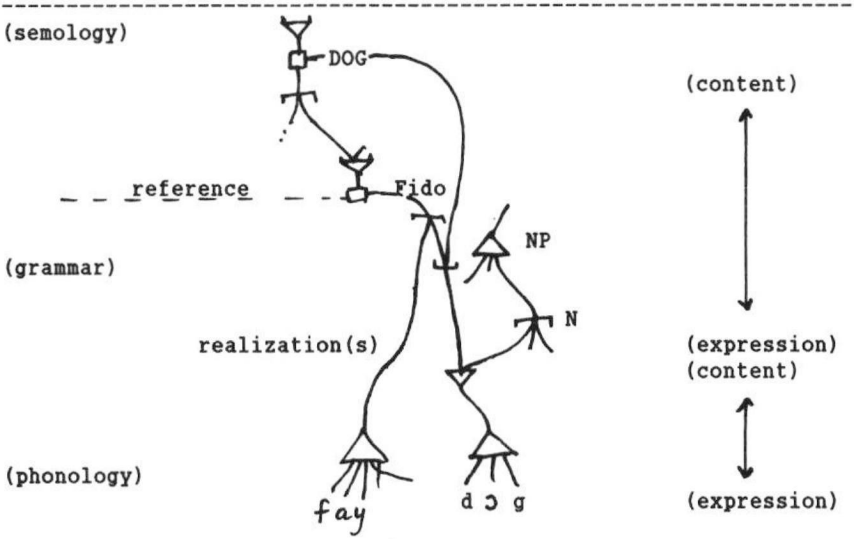

Figure 4
A STRATIFIED LINGUISTIC SIGN

Each of the linguistic -emic elements thus identified are seen to have a four-way function: a content function (upward), a contrastive function (describing an inventory), a tactic function (specifying arrangement); and an expression function (downward).

A network of linguistic signs can be described as being constructed entirely of relational configurations that Lamb has called nections. A nection can be seen graphically as a tree-like relational structure that includes a single central line and extends to the limits of its outward branchings in an upward and a downward direction. The linguistic sign shown in Figure 2 is composed of three nections. The central line of each nection is labelled 1, 2, or 3.

1.4. Structure/process. While many people now reject an absolute distinction between structure and its use, the notion of structure remains a useful heuristic abstraction. Semological structure is evident in the network of knowledge that is present, either formally (universally) or present in the memory as the content of what has been perceived or imagined. Evidence for such structured information is found in language behavior. Process involves the use of language and results in learning, i.e., the modification of one's network of knowledge by way of adding semological structure as well as by way of activating and interconnecting already existing structure. Figure 5 shows the result of the modification of the semological network in Figure 2 to reflect the information added or learned by decoding and understanding the expression:

1. John is Fido's owner.

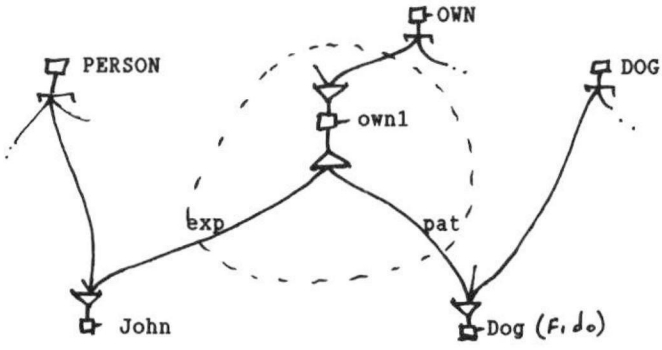

Figure 5

The new (added) information is indicated by the dotted circle. As indicated, the information in this utterance consists of newly added particular nodes and their predicational connections to their corresponding domains.

1.5. Constancy/Variation. Modern linguistics has, by and large, been more concerned with putative formal linguistic universals than with the content of discourse. And thus

linguistic Structure has been the major concern since Saussure, although most linguists in the twentieth century, including Saussure have insisted that linguistics should be able to account for the constant creation of new signs. Thus structure is viewed as providing the constancy that underlies the fluctuations and changes of speech. Such constancy may be the result of at least two different but related aspects. One such aspect of structure involves cognitive universals, i.e., universal forms or matrices for knowledge that are determined by the nature of the human mind. The term cognitive universals is more appropriate than linguistic universals, because solid evidence is lacking for universals that are exclusively linguistic as opposed to more broadly universal properties of human intelligence in general. The second aspect of structure consists of contingent networks of knowledge that are specific to a language or culture. Such networks are acquired by experience and stored in memory, and it is the content of these networks that is constantly being modified in the processes of discourse in accordance with the universal properties of the first aspect. Both types of structure are components in current theories of human intelligence.

2. In the Critique Kant conducts an empirical study of a priori knowledge. He calls his epistemology "transcendental". And by this he means that his primary concern is not with the content of experience but rather with the forms or ways in which the human mind by virtue of its structure is compelled to react in perception and thought to any possible stimulus from an external world. These forms of mental activity are thus universal and also a priori, i.e., they exist independently of experience. They are the means by which all experience is shaped and presented to us as sensible representations and intelligible concepts. Possible assertions about human experience necessarily fall into one or more of the four universal categories that are shown in Figure 6, plus two; i.e., the categories of quantity, quality, relation, and of modality. In addition to the four categories, all experience is presented under the universal forms of space and time. Time is a permanent form in which the external world (sensory manifold) is presented as successive and changing. For Kant time is not a feature of the external world, but is projected onto experience by the human mind. The permanence of time is experienced as a durability in objects underlying their alterations in time. Events are properties of things as presented in time. Space is a universal form that participates in the unifying of sense data into bodies , i.e., physical objects that are represented as extended, shaped, and impenetrable by one another.

Statements that one can make about necessary forms of knowledge constitute what Kant calls universal judgements about things. In order for us to understand a world, the structure of human experience must be so constituted that we are able assert a priori that things exist, that at all times and places things will occur before and after, above and below, or to the right or left of each other; that things will have size, shape, number,

and other sensible qualities that may be predicated of them; that they will have causes and produce effects, etc.

Just as with science, human understanding is reductionist. The mind operates to synthesize, to unify, to reduce sensible experience to 'categories' and in this way to 'understand them'. The categories thus give intelligent form to the sensible manifold. The content of experience consists of a network of knowledge that is both extensive and intensive; extensive because it constitutes a totality that is presented all together at the same moment. In this context Kant invokes the notion architectonic, i.e., the act of constructing a system of relationships. The mind does not permit our knowledge to remain in an unconnected and rhapsodic state but requires that the sum of our cognitions should contribute to a system, i.e., a unity with its limits, but with a designated place, that each of its parts is to occupy. This network of knowledge is intensive, because knowledge varies in degree and intensity of quality of experience, i.e., it shows gradation within the continua of time and space and the continuum between presence and absence.

QUANTITY	QUALITY	RELATION	MODALITY	SPACE	TIME
unity	reality	substance	possibility		
plurality	negativity	cause	existance		
totality	limitation	community	necessity		

Figure 6
UNIVERSAL CATEGORIES OF UNDERSTANDING a priori

I will return to a consideration of Figure 6 in a moment. The categories form the cognitive matrix into which the content of perceptual experience is synthesized and arranged. They receive all of their content from sense experience. The mind tends to regard the structure of the external world of reality as being identical to the structure of thought, but Kant reminds us that we have no way of knowing the real nature either of the chaotic welter of sensations in the sensible manifold or of things-as-they-are-in-themselves in some putative real external world of material objects.

Sense experience transforms the sensible manifold into a sensible world of what Kant refers to as Phenomena. Phenomena are concepts of particular things in concreto, i.e., specific mental objects that are presented only under space and time. In accord with the universal categories of understanding, the mind constructs in addition an order of DOMAINS, i.e., general objects of thought that transcend the objects of sense and that are possessed of an intelligible content. Although such constructs are not presented to sense experience (have no reference), the mind regards them as intelligible 'things', and thus Kant calls them Noumena (Greek for 'intelligent object'). The part of cognition that involves Noumena Kant calls conception, and the part that deals with Phenomena in concreto (sensations,

perception) he calls intuition. If we rearrange the semological content in Figure 2 to illustrate the relation of Phenomena to the sensible manifold on the one hand, and to Noumena on the other, the result would be something like Figure 7.

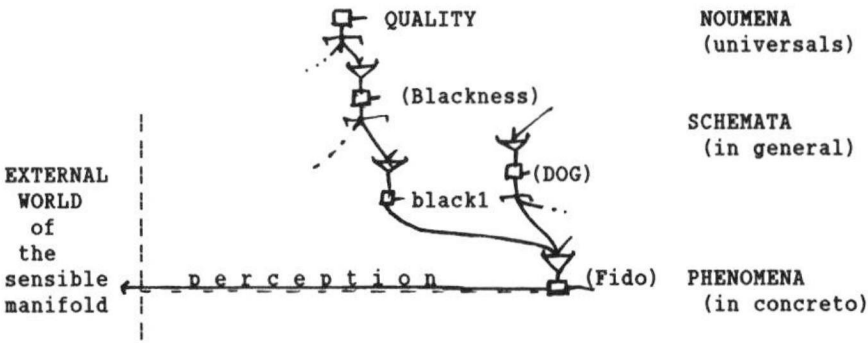

Figure 7
PHENOMENA, NOUMENA, AND THE SENSIBLE MANIFOLD

Noumena make up the non-sensible intelligible world; phenomena constitute the sensible world; and the 'stuff' of the sensible world of Phenomena is provided by the sensible manifold, which is accessible to the mind through perception. Outside the external world of the sensible manifold lies the world of the Thing-in-iIself of which according to Kant only Existence can be predicated.

Now I would like to return briefly to the categories in Figure 6. The way in which the content of the categories is represented in relational network notation is, in part, in the form of configurations of lines and nodes. This is illustrated in Figure 7. For purposes of illustration let us take, for example, the category of RELATION in Figure 5 RELATION is subdivided into substance/accidence, cause/effect, and community. Kant points out that each of the four major categories forms a class of three, and he also states that the third category in each triad always arises from the combination of the second category with the first. Substance/accidence are the terms of the relation of a DOMAIN to its particulars. The opposition, cause/effect, refers to events in general that involve cooccurrent antecedents and consequences. Community refers to the reciprocity between, for example, the agent and the patient in transitive events.

The relations subsumed under Kant's category of RELATION are immanent in the relational network hypotheses of a stratificational semological structure of discourse. This is demonstrated in the reticulum in Figure 8, which is a partial diagram of the relations that obtain in the semological representation of the utterance:

2. I made John read that book

The diagram shows, from the top, the levels of discourse structure, speech act, cause/effect, event, and entity, with the particular entities (semons) at the bottom of the network semological). Not shown are their realtional to connections to grammatical structure.

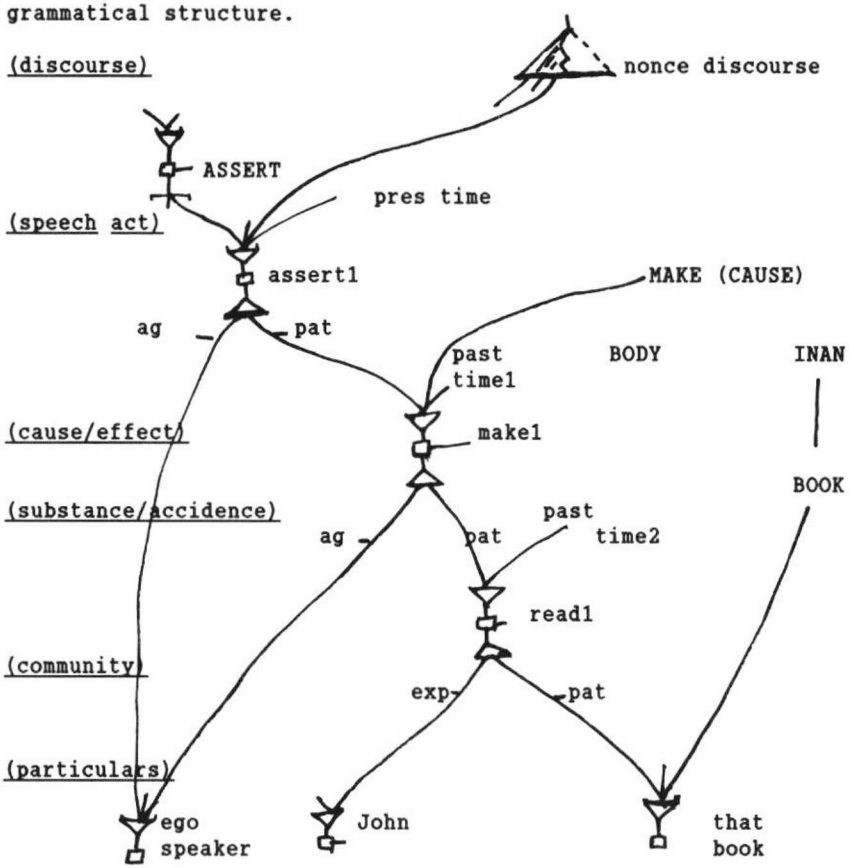

Figure 8.
I made John read that book.

Time and space and some categories in addition to RELATION are also represented in the diagram, either as immanent in the propositional structure of the lines connecting the nodes or in the nodes themselves. One major difference in the two formats is the object-oriented nature of Kant's conceptual structure as against the more obviously relation-oriented structure in this version of cognitive linguistics.

Contact between the pure concepts (universal categories) and the sensible particulars is accomplished by intermediary relationships called Schemata by Kant. Schemata are intermediary Domains that occupy a position between the particulars, that are outlined in space and time, and the universal categories. They consist of form that provides a general representation for all particular objects of a given class. In addition they are presented under space and time, but with the sensible content abstracted out. For example, between the pure category of QUANTITY and sensible particulars there is the schema of number. What Kant calls schemata are also represented in a relational semology. Figure 9 illustrates a method of conceptualizing the category of QUANTITY, the schemata of number, and the distinctions of unity (one), and plurality (many). The diagram does not include a representation for totality (aggregate), etc.

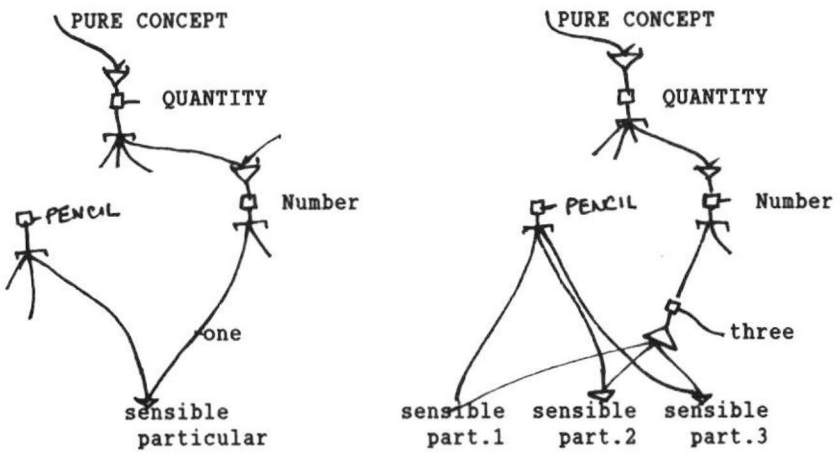

Figure 9
SCHEMATA

Finally, and in summary, I do not want to suggest that relational network semology and Kant's system are merely notational variants. Kantian epistemology represents a point in a long tradition of speculative science and is, of course, much more philosophically encompassing than current cognitive studies of human intelligence and cognition. But the two share important interfaces and there are many useful parallels. Despite Kant's apparent neglect of linguistics, we can productively employ Kant's categories as a backdrop of axioms for the study of the structure of meaning potential in language and of discourse, as well as of their intimate relationship to the structure of the human mind.

THE STYLISTICS OF HEIGHTENED EMOTION IN JOYCE'S PORTRAIT OF THE ARTIST

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The aim of literary linguistic stylistics, as we see it, is to demonstrate how literary effects are achieved by linguistic means. This statement of intent involves two assumptions: that literary text does something, and that its means is language. The statement also distinguishes carefully between the literary effect and the means to that effect. This distinction can be realized in different forms of description. Literary effect can be described appropriately in aesthetic or psychological terms. Linguistic means is described appropriately with the apparatus of linguistic science. Although it is possible to start with language and proceed to literary effect, we choose to begin with a non-linguistic perception of literary text, and later to ground that perception of the text in the linguistic facts of the text.

That an initial perception of a literary text may be aesthetic and psychological does not imply that it is a static perception. The later linguistic interpretation of the text serves a number of ends, but among them is a deepening of the original perception. There is a reciprocity between non-linguistic and linguistic approaches to texts, which makes them mutually illuminating. An alternative to this approach is to proceed in the opposite direction, to interpret the text as a collection of linguistic facts, and to deduce from these facts the literary intention of the text. Such an approach avoids the paradox of selectivity, the paradox that the critic feels he already knows which linguistic facts to report before he begins linguistic description. Proceeding in this direction, however, neglects the fact that texts do communicate themselves, and that linguistic description is designed to reveal how the trick is done. This approach also neglects the potential reciprocity between non-linguistic and linguistic descriptions precisely because it is a linear methodology.

Aesthetic and psychological assessments of style have a time-honoured place in the literature of criticism. Interpreters of Joyce's A Portrait of the Artist as a Young Man have made frequent use of such assessments to isolate the intentions of the text (eg., Levin 1941/1960; Naremore 1967; Wilds 1973). This in itself is a means of accounting for literary effects, and is to be heeded when proceeding to linguistic stylistics. But style so described can also be taken as a literary effect, susceptible to further, linguistic description. For these reasons, the linguistic

stylistician can approach the literature of traditional criticism to inform his pre-linguistic perception of a literary text.

Long since, literary critics have argued that varieties of style in Portrait reflect moods and emotions of the protagonist, Stephen Daedalus, and that climactic passages show concentrative stylistic techniques, but not always successfully, eg., Levin (1941/1960: 49-55). Later critics began to see overwritten passages as ironic reflections of Stephen's immaturity (Woodward 1961: 41 ff.). Still later critics have seen stylistic variation in Portrait as central to literary effects in the book, and have attempted notional descriptions of some of the styles (Manso 1967: 221-228; Naremore 1967: 331-341). It is now generally recognized that the intentions of the novel transcend the overt narrative voice, and are expressed in "style" or "rhetoric" in a broad sense (Wilds 1973: 40-41). The particular style of the narrator at any place in the book is always ironic, although sometimes more overtly than at others. Indeed a myriad of particular styles can be distinguished in the text, of which one is the famous "purple prose" or "inflated, romantic style" (Wilds 1973: 43) which has so troubled the critics. It is the manipulation of these styles which reveals the intentions of the book. It has also come to be recognized that stylistic traits are part of the rhythm of long stretches of text, and even of the whole book (eg., Naremore 1967: 333). At present, however, no full account of stylistic rhythm for the whole book exists, or even for any one of the distinguishable styles that appear and disappear in the course of the narrative.

One early, and not very flattering, critical review of the book, by Frank O'Connor, distinguishes one such style as Joyce's "peculiar style" (O'Connor 1956: 295 ff.). This particular category overlaps with the later, and rather more diffuse critical terms "romantic" and "purple". O'Connor discovered its origin in the earlier work Dubliners, where it plays a significant part in a few of the stories. He disapproves of the "peculiar style" aesthetically, since it depends upon distortions of ordinary discourse rhythms through seemingly excessive repetitions and inversions of word order. In that reading, O'Connor misses the ironic possibilities of the style; but he does recognize some of its linguistic features, and that it runs through Portrait as an element of narrative rhythm. His notion of the "peculiar style" is important, despite its limitations, because this style is a key to the emotional rhythm of the novel.

It has long been recognized that one of the important themes of the novel is the formation of the personality of the artist by various stimuli. In the structure of the narrative, processes of formation are symbolized by isolated, climactic episodes, each implicitly the culmination of gathering forces. Within each such episode is a moment of intense emotional response. These moments of intensity, taken together, constitute a story-line for the evolution of the protagonist's spirit: this is one of the basic

narrative rhythms of the book. Such peaks of emotional intensity are themselves usually symbolized both by phenomena and by the style in which phenomena are conveyed. This style is nothing other than O'Connor's "peculiar style", more widely distributed than he seemed to suggest, and wider in its linguistic resources than he allowed.

This style is climactic in another sense as well. Features of language which characterize the style are densely distributed in passages which contain it. But these features occur more diffusely throughout the book in passages which are still distinctive. The "peculiar style" is thus a climactic realization of an ever-present stylistic potential. It is also an ironic style, which is made to represent sometimes the limited aesthetic sensibility of the person being described, and at other times a still limited sensibility belonging to the person describing: the artist as a young man, sketching his earlier self, and in that sketching, his own delayed aesthetic adolescence.

The aim of this paper is to outline a theory of the "peculiar style". The theory will have three parts. The first accounts for the distribution of the style in the whole novel. The second is a linguistic description of the style, concentrating on its features and their functions, drawing mainly on descriptive techniques in the tradition of Systemic linguistics. The third part is a description of the function of this style in narrative rhythm, up to the climax of that rhythm.

In accounting for the distribution of passages characterized by the "peculiar style", we have to keep in mind that these passages are distinctively different from those merely showing some elements of the style. An example of the latter is:

> Without waiting for his father's questions he ran across the road and began to walk at breakneck speed down the hill. He hardly knew where he was walking. Pride and hope and desire like crushed herbs in his heart sent up vapours of maddening incense before the eyes of his mind. He strode down the hill amid the tumult of suddenrisen vapours of wounded pride and fallen hope and baffled desire. They streamed upwards before his anguished eyes in dense and maddening fumes and passed away above him till at last the air was clear and cold again. (Joyce 1968: 86).

In this paragraph the "peculiar style" is faintly echoed in the distribution of premodifier structures, and in the single repetitions of the lexis "walk", "down", "hill", "pride", "hope", "desire", "vapours", "maddening", and "eyes". Passages, however, which truly represent emotional heights and have the full characteristics of the style are listed as follows (references to Joyce 1968):

dream in the infirmary (pp. 26-27)
pandybat episode (pp. 50-51)
abandonment to lust (pp. 99-100)
nightmare vision of conscience (pp. 137-138)
vision of the bird-girl (p. 171)
dawn inspiration (pp. 217-218)
augury of the birds (pp. 224-226)

Obviously it is neither feasible nor desirable to offer linguistic description of all these texts. To characterize the "peculiar style" it will be sufficient to analyze part of one passage, that depicting the child Stephen Daedalus being tormented with strokes of the pandybat. This episode occurs at Clongowes. Some of the the older boys have recently been convicted of group masturbation in the latrine, and the Jesuit Fathers have tightened up discipline everywhere in the school. Stephen is somewhat fantastically accused of having broken his spectacles in order to avoid classwork, and punished summarily:

> (1) Stephen closed his eyes (2) and held out in the air his trembling hand with the palm upwards. (3) He felt the prefect of studies touch it for a moment at the fingers to straighten it (4) and then the swish of the sleeve of the soutane as the pandybat was lifted to strike. (5) A hot burning stinging tingling blow like the loud crack of a broken stick made his trembling hand crumple together like a leaf in the fire: (6) and at the sound and the pain scalding tears were driven into his eyes. (7) His whole body was shaking with fright, (8) his arm was shaking (9) and his crumpled burning livid hand shook like a loose leaf in the air. (10) A cry sprang to his lips, a prayer to be let off. (11) But though the tears scalded his eyes and his limbs quivered with pain and fright he held back the hot tears and the cry that scalded his throat.
> (12) --Other hand! shouted the prefect of studies. (Joyce 1968: 50).[1]

One's first impressions of this text are dominated by extremes of sensation. Foremost is the tactile sense, overwhelmed by the sensation of burning. Reinforcing this horror are references to alarming sounds. The inner sense perceives loss of neuromotor control. Simultaneous impressions of emotional intensity centre on terms suggesting pain and fright, but contrary to these is an impulse to childish pride. More important, perhaps, are the language distortions that suggest imminent dissolution of intellectual and emotional control -- which is recovered again very quickly at the end with the choking back of tears. The last sentence is deliciously heart-stopping: an anticlimax both in its change in point of view and in its revelation that all is to be suffered a second time. Yet the reader is also distanced from the

protagonist by the style, which suggests by naivete the naivete of the childish perception. Hence there is a conflict between a genuinely evocative description of misery and an unavoidable evaluation of sensibility.

These impressions of course are grounded in formal linguistic structures. Among the more obvious relevant structures are the lexical. From the theory of collocation is derived the concept of the lexical set: any set of lexical items in a text which possess similar collocational ranges (Spencer and Gregory 1964: 73 ff.). Lexical sets in texts are functional; that is, they serve to determine diatypic distinctions (Gregory and Carroll 1981: 30-31) and they may also be interpreted aesthetically. The identities of sets in a text are mutually self-determining, that is, in any particular text, the collection of all the sets must be viewed as a whole in order to determine the boundaries of any of the sets (Cummings and Simmons 1983: 195-198). With these principles in mind we can usefully itemize lexical sets in the pandybat quotation as follows:

BODY	SENSATION	EMOTION	VIOLENCE	OTHER	
eye	feel	tremble	pandybat	close	leaf
palm	touch	shake	strike	hold out	drive
finger	hot	fright	burn	air	whole
hand	burn	cry	sting	upwards	loose
tear	sting	prayer	blow	prefect	spring
body	tingle	quiver	loud	study	let off
arm	loud		crack	moment	hold back
lip	sound		break	straighten	
limb	pain		stick	swish	
throat	scald		crumple	sleeve	
	livid		fire	soutane	
			pain	lift	
			scald	make	
			shout	together	

Including items which occur in more than one set, the four specifically named sets constitute about 65% of the lexis. This certainly accounts for some of the initial impressions of the text. More important is the extreme concentration afforded by the text on just four named categories, which helps to account for the impression of intensity. Each of the named sets is also unusually concentrated in itself: very little imagination is required to find these sets and to include items within them. The miscellaneous set with 35% of the lexis may not be entirely devoid of interest: perhaps a pair of contrasting sets centred on "claustrophobic" and "open" motifs lurks in the collection. The mere fact of repetition of lexical items acts in concert with the concentration of lexis into just four very clearly defined sets: items which repeat are -- by set -- eye, hand, tear; hot, burn, pain, scald; tremble, shake, fright, cry; burn, crumple, pain,

scald; (and air, prefect, study, leaf). O'Connor isolated lexical repetition as part of the "peculiar style" (O'Connor 1956: 304). In fact lexical repetition is only one among various features which contribute to an extreme, almost surrealistic concentration of linguistic resources.

The passage has a number of features contributory to the style which belong purely to syntax. Very notable is the extreme degree of parataxis at both clause and group rank. Most clauses by far occur in paratactically ordered series, usually pairs, and usually linked by "and" (which occurs seven times in the main paragraph). Group rank pairs accumulate at the end of the main paragraph for climactic effect. In context this tendency seems to contribute to the impressions of simultaneity and intensity of sensations. It also evokes the well-known impression that child language is ridden by parataxis. Another syntactic repetition is realized in the large number of "-ing" endings (nine) representing present participles and progressive aspect verbal groups. It has much the same functions.

The repetitious syntax may seem peculiar enough, but in addition there are positive distortions of normal syntactic expectancy. Occasionally there is a displacement of Adjunct element from ordinary S P C A order, eg., "in the air" (2) before its Complement, and the thematized "at the sound and the pain" (6). Far more arresting are the pleonastic nominal group premodifier strings, "A hot burning stinging tingling (blow)" (5) and "his crumpled burning livid (hand)" (9), which are of the sort that attracted O'Connor's unfavourable attention. Most peculiar of all is the ellipsis of predicate in (4) which leaves the Complement "the swish of the sleeve of the soutane" either dangling or else linked to the item "feel" from the previous clause. Like the mild distortions of parallelism and repetition, these devices succeed in evoking a number of different contexts characterized by effusive language, chiefly situations which are emotionally charged and texts resulting from youthful attempts at forceful rhetoric.

An important contribution to the same effects is made by forms of repetition which have to be viewed as both lexical and syntactic. The same deep lexico-grammatical structure may occur in different surface forms. Thus we get "scalding tears" (6) and "tears scalded" (11). The structure is partially carried through in "cry . . . scalded" (11). Another instance is realized in the series "His whole body was shaking" (7), "his arm was shaking" (8) and "his . . . hand shook" (9) in which the same lexical item is retained as a Predicator element throughout, and the Subject element lexis nicely progresses from whole to part. A further extension of the technique puts lexis which is at least from the same set into nearly parallel syntactic structures. Thus "His whole body was shaking with fright" (7) is matched by "his limbs quivered with pain and fright" (11) and "like a leaf in the fire" (5) is matched by "like a loose leaf in the air" (9).

Structures on the formal level are supported by various devices on the phonological level. In (4), "the swish of the sleeve of the soutane as the pandybat was lifted to strike" is two members separated by caesura, and coupled together by alliteration and the near repetition of a very distinctive stress rhythm. Further alliteration is found in the sequences "burning . . . blow" (5), "like . . . loud" (5), "like . . . leaf" (5) and "livid . . . loose leaf" (9). The two pleonastic nominal groups "A hot burning stinging tingling blow . . . " (5) and "his crumpled burning livid hand" (9) show parallel syntax reinforced with parallel stress rhythms; the first enjoys the "-ing" rhymes as well. The stress rhythms, the alliteration and the rhymes are so insistent that they convince us of the urgency of the feelings involved, without causing us entirely to empathize.

One of the aspects of the syntax which does not distance the reader from the text is the skillful manipulation of transitivity roles. The analysis which follows refers to Halliday (1967a, 1967b, 1968), and, more conveniently, to Barry (1975: 149-161, 177-188, esp. 189) from which we need only consider the system "restricted process/unrestricted process" and its dependent network. All the verbs in the passage assist in marking choices from the transitivity network involving transitivity roles "actor", "causer", "goal" and (in causative types) "affected actor". Three of these roles form a cluster: the role "goal" in the transitivity choices "restricted/non-middle/transitive/active", "restricted/non-middle/transitive/passive" and "intransitive"; the role "affected actor" in the choices "unrestricted/causative/active" and "unrestricted/causative/passive"; and finally the role "actor" in the choices "middle" and "non-causative". As opposed to the roles "actor" in the first three choices, and "causer" in the next two, these roles are relatively passive in spirit.

The major participant in the passage is Stephen's person, in whole or in part. There are several others, eg., the prefect of studies, the pandybat, a stick. Distribution of these participants among the transitivity roles is so arranged that Stephen's person is the predominant participant in the role-cluster goal, affected actor and actor (in middle and non-causative). Out of twenty-six instances of participation in this cluster of roles, Stephen's person accounts for twenty-four of them. In the remaining two roles, Stephen's person accounts for just six out of nineteen instances. In all of these six, the goal or affected actor is also part of Stephen's person anyway. The cumulative effect is to consign Stephen utterly to the role of passive, suffering subject. This too represents a concentration of effect, but one executed unobtrusively by comparison to other concentrating devices in the style.

Syntax is also important to the structuring of the passage as a discourse unit. Before the anticlimactic final sentence (12), the main paragraph rises to a climax twice, thus falling into two

parts. The first half is dominated by action and sensation, the second half by reactions, both physical and emotional. Most of the independent clauses in the main paragraph are based on a structure S P (A) (C) (A).[3] This holds good for all except (6) and (11). The latter have the structure A S P A/C. Each of these two clauses has incidental parallels as well. Each starts with a linking conjunction (and/But), in each the thematized Adjunct has a parataxis, each contains the deep structure "tears scalded", each has the lexis "pain". The effect is to punctuate the two parts of the paragraph with a similar deviant structure. Each time the deviant structure realizes a climax.

As for the third part of the theory of the "peculiar style", all of the characteristics discussed, phonological, syntactic, lexical and discourse, can be found in the "peculiar style" passages taken as a whole. Most of them can be found in each passage because they comprise the real elements of the style. As in the pandybat episode, these elements always signify in different ways three different personnae: Stephen Daedalus at some youthful stage of development through early young manhood; Stephen Daedalus the fictitious artist, still in his artistic adolescence, the obvious consciousness behind the style; and finally the mature artist who uses the style ironically to represent two stages of his previous self.

A more complete treatment of the novel would demonstrate this distribution of features and their functions through the list of such passages. The most important of the subsequent occurrences of the style are the nightmare vision episode and the vision of the bird-girl. The nightmare vision episode (Joyce: 137-138) is Stephen's dreamlike reaction to a Jesuit hell-fire sermon. Salient characteristics include lexical concentration, syntactic parallelism and pleonasm, alliterative and prosodic support. The bird-girl episode (Joyce: 171) is usually taken to be the most significant moment in Stephen's growing self-awareness of his vocation as an artist. Stephen's partly autonomous artistic consciousness combines the perception of a girl wading in the sea with the epiphany of the divine in the form of a bird. The "peculiar style" here has all of the above characteristics, and realizes at the same time a height of lyricism and ingenuousness.

Each of the "peculiar style" passages represents the climax of a stage in Stephen's growing perception, and the climax of the associated emotions. Among all these passages, the bird-girl episode is itself climactic, marking a threshold condition in artistic self-awareness. These two climactic orderings constitute a narrative and symbolic rhythm in Portrait. Despite this progressive structure, the "peculiar style" is itself static, in the sense that it does not evolve, or show any marked variation in the inventory of techniques from occurrence to occurrence. It is for that reason that the style must be referred to a narrator personna. The relative immaturity of the style as technique

identifies that personna as the young artist, and the irony of this device in fact refers the whole narrative and symbolic rhythm to the same young man. It is part of Joyce's effort to render a portrait of the artist as portrayed by the young artist.

FOOTNOTES

1. Numbers introduced into this text represent independent clauses. The structure of (4) is admittedly ambiguous. The structure of independent clauses is taken here to include functional elements realized by subordinate clauses (cf. Note 3).

2. The category of Stephen's person includes parts of his body and intimately connected concepts, ie., "tears" and "cry".

3. Some of the clauses do not explicitly realize this structure because of ellipsis. Furthermore, most analysis in the Systemic tradition would take subordinate clauses with a general adverbial function as elements in a clause complex, and not assign them a multivariate function label, eg., "Adjunct". But it is convenient here to sum up this common adverbial function of such clauses and clause Adjuncts under the broad category "Adjunct", as in some forms of Scale-and-Category grammar (cf. Gregory 1972). Similarly we have taken the secondary verbal element in phrasal verb structures as Predicator in a clause rankshifted to the Complement after the primary verbal element. Linkers are here not analyzed as Adjuncts.

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THE NATURE OF RELATIONAL NETWORKS IN A NARRATIVE TEXT

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> "Cohesion refers to a pattern of elements either tying items together in a sequence, or as relating them to background explicit or implicit structures." (Pike 1982: 132)

Halliday's question about "how a text hangs together" prompted the initial research for this study. In investigating the structure of a text the fundamental step is to devise elementary relations into which more complex relations can be analyzed (Lamb 1983: 5). Therefore, we progress from simple relations to more complex meaning units. A heuristic procedure of dividing the text into smaller and larger units was empirical at first but became more systemized as the analysis proceeded. Segmentation patterns and rhythmic sequences became more and more important.

Any kind of linguistic alternation occurring in the text is viewed as part of an overall pattern and analyzed for its functional significance. As Sydney Lamb has repeatedly stated, "such a relational treatment of alternation attempts to seek out those points in the relational network at which a choice is made." This "choice" includes incidents where the same sign can possess two separate meanings or when two different signs "mean" the same. In Günter Grass' Katz und Maus, our text model for this investigation, the absence of Flugzeug (aircraft), for instance, is specified by the presence of Möwen (seagulls) with whom the aircraft shares identical features. They coexist within the same contextual environment, but only one needs mentioning. This fact allows for the following discovery procedure:

> "We are actually seeking the unknown - the schema y - with the assumption that y is something 'internal' in relation to x, that whenever x exists y exists too, and that y is 'entailed' by x as its coexistant." (Falk 1981: 19, 20)

Consider the following two passages from Katz und Maus. Both, Text A and Text B, use the same frame of reference, discuss the same conceptual proposition, namely an environment referred to in the text as Siedlung (i.e., "housing development"), in particular, the neighborhood where the protagonist of the novella, Mahlke, and his friend and narrator of the text, Pilenz, live. Both text portions discuss the very same idea: that everything in that environment looks alike (gleichgeartete Einfamilienhäuser) and that there are no manifestations of any kind that could explain neither the protagonist's outsider status nor his outstanding abilities. In addition, both texts affirm the cultural implications of Siedlung and everything else that is associated with that concept.

Text A:
"Euer Haus stand in der Osterzeile.
Sehen ja alle gleich aus, die Strassen
der Siedlung." (K/M: 16)

[Translation:]
"Your house was in the Osterzeile
(i.e., street name). They all
look alike anyway, the streets in this
development."

Text B:
"Auch hielt sich jeder Vorgarten
Vogelhäuschen auf Stangen und
glasierten Gartenschmuck: entweder
Frösche, Fliegenpilze oder Zwerge.
Vor Mahlkes Haus hockte ein keramischer
Frosch. Aber auch vor dem nächsten
und übernächsten Haus hockten grüne
keramische Frösche." (K/M: 16)

[Translation:]
"Each garden in front (of the houses)
had its own little birdhouse up on a
post and glazed garden decor: either
frogs, mushrooms or dwarfs. In front
of Mahlke's house there was a ceramic
frog in crouching position. But also
in front of the next house and the one
following, there were green ceramic frogs in
crouching position"

Both texts discuss the topic of "neighborhood development," though only Text A makes use of the word Siedlung itself. Nevertheless, both texts recall the same properties that all "Siedlungen" have: a row of houses, all looking the same with a little garden in front, usually populated with kitchy figurines. "Siedlung" consists of small houses, small gardens, small streets and are inhabited by "small" people. It propagates uniformity, "Spiessbürgertum" and "Gemütlichkeit" and is essentially idyllic and harmless. All objects that the text refers to are conceptualized realities. Everybody knows what a "Siedlung" is anyway. Therefore Text (A) is terminated rather bluntly as "not worth talking about." It does not bother to mention the little gardens in front of the houses.

Text (B), on the other hand, takes its point of departure from that very garden and introduces it as the concept of Vorgarten. It includes the lexeme Haus but utilizes the particular qualities of those gardens rather than describing the house.

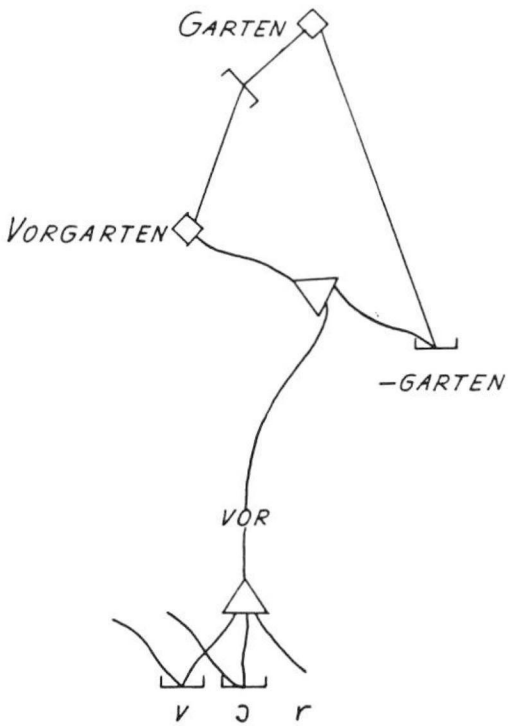

fig. 1

Haus is retained as the semantic nucleus, while Siedlung, which was the highest ranking conceptual unit in Text A, recedes into the background. So there is considerable difference which does not only rely on word alternation. We can say that from one text to the other, we can move downward in the conceptual hierarchy.

With Haus as the semantic nucleus realized both as Mahlke's Haus, and as Vogelhäuschen, Text (B) descends further down in the conceptual hierarchy towards the classes of individual elements. It specifies the features of those elements, thus progressing from conceptual/general to individual/perceptual:

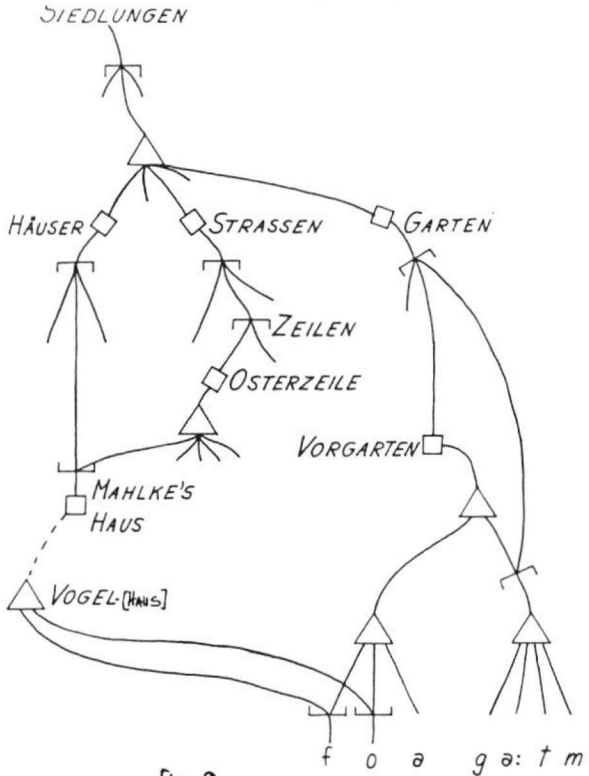

fig. 2

The "lines lead upward to or toward properties/functions/significance and downwards to individuals and classes of individuals exhibiting the specified features (cf. Lamb 1983: 25)

It is interesting that the phonemic relation that links Vo- r-garten with Vo- gel-haus, re-establishes a semantic relation between garten and haus which as a concept already existed outside the text. This linkage reinforces the existing notions, though not for the benefit of the concept but rather to intensify a relational network built primarily on perceptual bonds.

In taking a closer look we notice that the internal composition of Text (B) uses language differently than did Text (A): it links words of different meaning into a string of equivalent parts and disregards the notions established within the normal conceptual hierarchy. The text does retain the concept Haus as its initial nucleus, but it finishes with Frosch (frog) as the thematic focus. Consequently, Haus and Frosch which have totally different meanings in normal language are now juxtaposed in the text as having similar functions and significance. They both have Mahlke as their connector.

In looking at Figure 9, we can state the following: Vorgarten has two components. It is a garden and it is situated in front of a house, hence its class membership with Haus. Haus appears in the text for the first time in its diminutive form, -häuschen, and represents the notion of "little house for birds," also, "auf Stangen." (on poles). Stangen or "poles" is used as a connector between the two spheres that constitute "garden" namely heaven or sky (birds fly) and earth (roots). By themselves they are part of the ground, but as "houses for birds" they point upwards. They are equally close to both spheres. Man is not. He does not have roots, is not grounded and cannot fly. He is of the earth, though, and so are his man-made objects. In Katz und Maus man does fly, with airplanes, but instead of "procreation" his efforts are destructive, hence the absence of real plants and real animals in his gardens.

The Vogelhäuschen is situated in a "Vorgarten" where it is supposed to attract birds. The latter relation positions Vogelhäuschen on a lower level of the semantic hierarchy since it is "a part of" a higher ranking unit, the "garden." In this quality, it is equated with Frösche, Fliegenpilze, and Zwerge. They are all part of the concept "Vorgarten" and they also belong to another semantic category: Gartenschmuck. They function as "decor" for the garden. Frösche, Fliegenpilze and Zwerge are all made of ceramics. They all carry the same translucent patina, hence glasierten Gartenschmuck. The Vogelhäuschen is singled out. It is made from organic materials: wood, suggesting "natural," while the others are "artificial."

The entire semantic cluster then gets dissolved into the notion of a particular house, a house for humans--Mahlke's house, which is really only a "Häuschen" in comparison to the other houses mentioned in Katz und Maus: Kirche, Schule, Turnhalle. Mahlke's house, too, has a little garden in front with a ceramic frog in it. His house is like all the others which may have frogs, and/or mushrooms, and/or dwarfs. Frogs and birds are animals. Dwarfs are not. Dwarfs are creatures, which although "glasiert" and "keramisch" in our case, may suggest a deformative quality as a characteristic of the humans who live there, even though they are not mentioned as being present. Certainly, they must live in those houses.

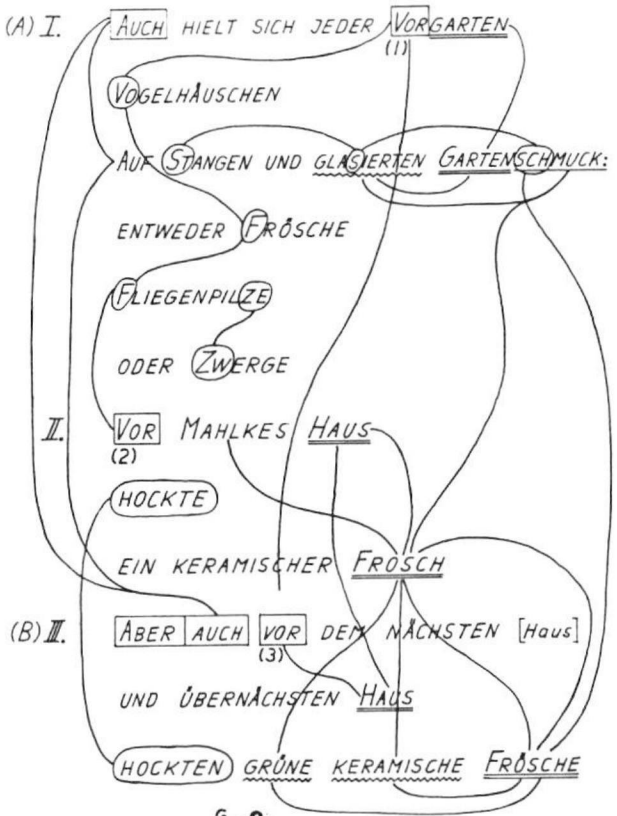

fig.3

Animals or humans or plants or even Mahlke, or other human beings, share the same monotonous environment. The relational network of the text suggest further that they not only look alike but are alike. They have artificiality and immobility in common. They are all grotesque and certainly not natural. They do not move on their own as live creatures should. The houses, whether they are members of that class or not, are mapped into the same category of "dead creatures in crouched positions."

The concept of greenness is verbalized for the first time in the last line:
"hockten (1) grüne (2) keramische (3) Frösche (4)."
But already the attribute grün exists as a concept that connects Garten and Frosch. Both are green, a fact that allows for another conceptual association, namely that of "Häuschen im Grünen."

1. All objects are in crouching position: the birdhouses, the frogs, the mushrooms, the dwarfs and the houses of the "Siedlung."

2. The garden is supposed to be green, but plants are not mentioned. The frogs are green but, hopefully, the houses are not.

3. They are all motionless, dead, artificial and somewhat translucent. They are suspended in time. They are grotesque, rather than what they could and should be: human and alive.

"Green artificial frogs in crouching position" thus sums up the text's message. Due to these last words' tonal (stress accent), syntactic (final position), and semantic (and their function as main connector) prominence, they emerge as the text's thematic focus--which in retrospect reworks the meaning of all the other words contained in the text.

While the conceptual system operating in Text (A) categorizes human experience, word meaning in Text (B) is new and different from the existing categories. We can say that Text B follows a different linguistic procedure. It operates on the basis of verbal associations but it does more than that: it generates new semantic equations. It establishes an intricate system of cross references that operates with simple lexomorphemic repetition. The transitions in their acoustic, syntactic and semantic manifestations are often surprising and quite amusing.

The following explanations given for such linguistic usage are excerpts from Vygotsky's discussion on what he terms the "chain complex" in child language:

> "A complex does not rise above its elements as does a concept; it merges with the concrete objects that compose it. This fusion of the general and the particular, of the complex and its elements, this psychic amalgam, as Werner called it, is the distinctive characteristic of all complex thinking and of the chain complex in particular." (Vygotsky 1962: 65)

The vision of green frogs in crouching position dominates Text (B). And that frog image ultimately refers to Mahlke (this story is not about Frogs!) The text in Figure 4 is a good example of how the allusion to Mahlke as frog is carried over into the thematic domain of the text.

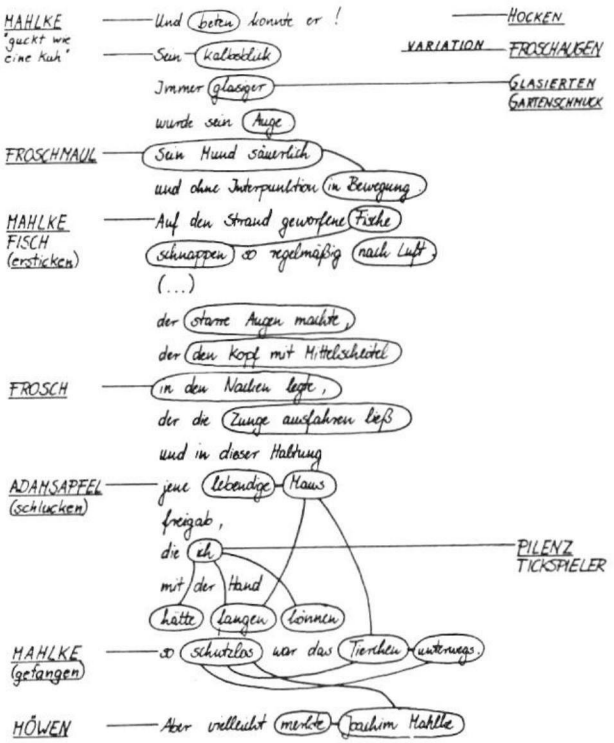

fig. 4

Mahlke's Adam's apple suggests a frog swallowing. Mahlke's tongue comes forward during prayers to take in the host just as a frog's tongue shoots out to catch a fly (this may also represent an association with Fliegen-pilze).

The word Fliegenpilze is of particular interest. It belongs to the semantic class "plants," but its constituent lexeme Fliegen at least suggests a possible connection with the class of "animals." While Vogelhäuschen still means a small house designated for birds, Fliegenpilze neither talks about mushrooms that fly nor does it want to say that the mushrooms are made of flies. From the construction of the two lexemes a new concept arises, just as "the English construction exemplified by redhead... is not...accounted for by the meanings of the constituents: a redhead is not a head but a person having red hair. (cf.Lamb 1983: 13)

To give a brief interpretation then, the frog and Mahlke "hocken" on top of water,isolated from the activities on shore. Water is their common element. Thus baptized, they await their fate and eventually die. The only hopeful notion that we are left with is the color green, and green is only a color, just as much as this text is only a story.

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VIII

SOCIOLINGUISTICS, APPLIED LINGUISTICS

THE ACQUISITION OF FRENCH MORPHOSYNTAX BY MONTREAL LUSOPHONES

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This is essentially a report on the early stages of a research project on the French of Portuguese speakers in Montreal. The Lusophone community there numbers about 22,000 native speakers, almost entirely from the Azores and continental Portugal, according to a recent sociolinguistic survey directed by Calvin Veltman at the Institut national de recherche scientifique of the Université du Québec*. The same study indicates that most Portuguese immigrants in Montreal have had less than five years of schooling and work in blue collar or service occupations. The highest rate of Portuguese immigration to Quebec was reached in 1973. All of the eighteen informants whom we have studied so far have been in Montreal three or more years - long enough to have a stabilized (or "fossilized") second language competence. We, then, are interested in the grammar of French as developed by such adult speakers in what has been called "natural" L2 acquisition.

Since one of the co-authors is a specialist in Portuguese and the other a Lusophone, we turned our attention to morphosyntactic structures which are clearly different from French constructions used in corresponding contexts. They are fundamental enough to pervade discourse, at least certain kinds of discourse, and we were interested in seeing what Lusophones would produce in contexts requiring their French counterparts. This study thus fits into the more general preoccupation with the interaction between the structural characteristics of the L1 and corresponding requirements of the L2, within the field of second language acquisition research.

We were particularly interested in (1) the past tenses; (2) the verb forms used in hypothetical proposition pairs (i.e. certain if-then constructions); (3) subject and object relative pronouns and complementizers; and (4) subject personal pronouns. We wanted first to see whether interview questions calling for certain kinds of discourse would create obligatory occasions for structures in categories (1) to (4), and if so, what speakers would produce in such contexts.

We have tried an experimental interview protocole with twenty informants. They were adults between the ages of 22 and 38, so the first questions dealt with their emigration from Portugal and their immigration to Canada. The answers here of course required

the use of narrative past tenses. The interviewer also asked what differences the speaker had felt the most between life in Portugal and in Canada. This led fairly naturally to the request that he or she describe a children's game played in Portugal (but not Canada), or a Portuguese recipe. The purpose of these questions was to elicit the description of a procedure, and thus, hopefully, of relative clauses, e.g.: "You take the eggwhites which have been mixed with sugar ..." We will return to the fact that "elicitation", in this case, was less successful than elsewhere. In roughly the second half of the interviews, we proposed that the informant tell a folktale, counting on the complexities necessary for coherence to provoke some of the embedded structures of interest. Before the end of the interview, the speaker was asked what he or she would do if he won $1 000 000 in the Quebec lottery. This followed naturally enough from the comparison of life in Portugal and Canada, since the follow-up question was whether the informant would return to Portugal under these conditions. The purpose of these questions was to create contexts for the French conditionnel forms in result clauses, and hopefully, some occasions for the imparfait form of if clauses. As for subject pronouns, the very fact that speakers were being interviewed, not pronouncing isolated sentences, meant that they would create many contexts for the French subject pronouns. We did not have to construct specific questions to this end; any discourse would require their use.

What follows, then, is a brief description of the relevant structural differences between Portuguese and French, of the problems we expected these differences to pose to our Lusophone informants, and of what actually happened in these respects.

Past tenses in narratives

The two most frequent tenses in past narratives in French are the imparfait (il perdait 'he lost, he was losing') and the passé composé (il a perdu 'he lost, he has lost'). The two most frequent tenses in Portuguese past narratives are (1) the imperfect (ele perdia), which corresponds to the French imparfait in its morphological composition (root + single affix), and, apparently, in its meaning; and (2) the preterite (ele perdeu), which largely corresponds in meaning to the French passé composé, but whose morphological shape is completely different (root + single affix). There is a passé composé in Portuguese (ele tem perdido), but its meaning is restricted to "immediate past", corresponding to the English present perfect, especially in the 'have just' sense, and its use is rare. We therefore expected Lusophones to have trouble correctly supplying the French passé composé in narrations, but not the imparfait.

Hypothetical and other condition-related propositions

Rules governing selection of tenses in both main and

subordinate clauses of such sentences are quite different in French and Portuguese. The one case where they correspond closely is when both clauses have the present tense (and these are not hypotheticals); see (1) in the Appendix. In realis hypotheticals, French calls for présent or past in the dependent clause, and futur or past, respectively, in the main clause. See (2). Corresponding to the more usual present ... future type are Portuguese forms as in (3): future subjunctive in the dependent clause and future indicative in the main clause, replaced more colloquially by a morphologically present periphrastic form. In true (irrealis) hypotheticals, standard French requires the imparfait (or plus-que-parfait, for a past context) in the dependent ('if') clause, and conditionnel (or parfait du conditionnel, in past contexts) in the main ('then') clause, as in (4). Portuguese requires the imperfect subjunctive in the dependent clause (or pluperfect subjunctive, in past contexts), while the main clause has a conditional in formal and written registers, replaced by the imperfect in the spoken language. See (5), noting in particular the variant with the auxiliary ir 'to go' in the imperfect. These kinds of sentences are pertinent to the results below.

Relatives and associated complement structures

Relative clauses are much alike in French and Portuguese, except that the latter has no qui/que rule, but rather que for both subject and object relatives. We will return at length below to relatives and que complement structures, as they are found in our corpus.

Null subjects

Portuguese is a so-called "pro-drop" language, and thus can have null subjects where French has pronouns. The "missing" subject is of course clear from verbal inflection and preceding context.

Results in brief: Expression of the past in narration:

Our hypotheses were borne out in part, but certain results were unforeseen. Most speakers regularly use not only the French imparfait but also the passé composé, sometimes with the expected avoir as AUX for verbs of motion (e.g. j'ai retourné 'I (have) returned', instead of je suis retourné). Portuguese has have, not be as AUX in corresponding forms, but most such examples are also compatible with popular Quebec French. Weaker speakers often use the simple présent, even though the context of the narrative is unquestionably past, and it is not the case that they have transposed the whole narrative into the present. More surprisingly, a number of speakers use French past participles, without AUX, in contexts for the passé composé, as in (6). In this simplification of the French structure by deletion of the AUX, or an attempt to maintain the morphological shape of the Portuguese preterite?

We are inclined to think that such speakers take the past participle for a preterite form, but the fact that some do not consistently distinguish the vowels /ɛ/, /ə/, and /e/ makes it impossible to decide in principle, since most French verbs are in the first conjugation. That is, a form like /*ʒɛkɔmãsɛ/, in (6), could be *je commencé (past participle as a pseudo-preterite), j'ai commencé (passé composé) or je commençais (imparfait). Is a form like /kɔmãse/ a past participle, an infinitive, or a badly pronounced imparfait? For verbs where the p.p. and INF forms are distinct (venir/venu 'come'), it is the participle which can appear in past narrations. Even if we take these forms as decisive, however, is the p.p. reanalyzed as a preterite, or is AUX deleted? (7) schematically indicates this area of divergence between the languages and exemplifies the main variants produced for the past, using the verb perdre 'to lose'. More surprisingly, some speakers occasionally replace the imparfait by the passé composé. Seeing that the latter covers the territory of their preterite, do they assume that it also partly corresponds to their imperfect? Less speculatively, we can say that the passé composé is clearly a present perfect and a preterite, while the semantic territory of the imparfait is harder to delimit. It is possible that for some Lusophone (as for Anglophone) L2 speakers, the use of the passé composé expands at the expense of the imparfait, in spite of the latter form's semantic similarity to the Portuguese imperfect.

Conditional and hypothetical constructions:

In our corpus, we seem roughly to find three levels of competence in answers to hypothetical questions: (a) the présent is used everywhere; (b) dependent clauses are correct (présent or imparfait), but main clauses show the imparfait (sometimes AUX in imparfait + INF), in variation with the présent. Although the imparfait reflects interference from Portuguese, it is not characteristic of the weakest speakers. The obstacle for the latter may simply be that they master présent, but not imparfait, any more than conditionnel morphology. At the highest level (c), the French construction occurs, but there are exceptions, usually in result clauses and in favour of imparfait forms. Though the strong speakers seem to use the imparfait almost entirely as Francophones do, hypothetical questions only require conditional clauses as answers. The latter, as obligatory contexts, provide rich error data in our corpus: see (8). We have also found a number of examples of the AUX aller ('to go') in the imparfait + INF. This is literally parallel to the Portuguese construction in (5). In addition, many of the morphologically present forms (in place of conditionals) are model auxiliaries, most typically pouvoir 'can', as in (9). These are not so much literal translations as a reflection of the extent to which modals and other verbs are auxiliarized in Portuguese periphrastic constructions (see Dias da Costa, 1976).

Relatives and complementizers:

In our corpus (see [10]), relative clauses are frequent, but they are not concentrated in the part of the interview where we were trying to elicit them. True oblique relatives (introduced by où 'where', dont 'of which, whose', or forms of LEQUEL 'which [obj. of prep.]' are almost non-existent. This is not surprising, since it is also true, mutatis mutandis, in native corpora (see, e.g. Lefebvre, 1982). Que clauses often replace other relatives, either remaining relative or containing the NP that should have been relativized; see 10. We also occasionally find complementizer que + INF, which is not possible in French. Infinitival complementation in Portuguese functions, in part, rather differently from French, but this area remains ill-explored among our informants for the moment. (See the example in [10] and Teyssier, 1984).

Null subjects:

Interestingly, the fact that French requires a subject in all sentences would seem to have been acquired by all the speakers studied, if Brown's (1973) criterion were used (i.e., subject pronouns are supplied in at least 90% of the obligatory contexts). However, some speakers show null subjects more than others, and we will return below to the contexts in which they are found. Clahsen et al. (1983) show that speakers of pro-drop Romance languages go through a null subject stage while acquiring German. In obligatory contexts for the inversion rule, null subjects precede the stage in which the verb + subject order is acquired. One could speculate that the fact that French is not a pro-drop language is so fundamental, and the evidence so clear and ubiquitous, that French L2 speakers will act accordingly from the start. We will see that a high proportion of the null subjects which do appear are linked to impersonal pronominal constructions. In fact, third person singular on structures, whether semantically first person plural or truly impersonal, are rare in our corpus. There may be a tendency here to reinterpret certain verbal constructions as subjectless pronominal impersonals, as in the pro-drop Romance languages: see (11). The details of verb subcategorization remain to be explored among our French-acquiring informants.

Social characteristics and levels of L2 competence

We are also interested in the correspondence between the nature of grammars and certain social characteristics. Here, in particular, we have focussed on age at arrival, number of years in the country of immigration, and number of years of schooling. In this immigrant population, however, these factors are not independent. The eighteen speakers whom we have studied are young adults, ranging in age from twenty-two to thirty-eight. With our present resources, we have not been able to study enough speakers

to compare age sub-groups among themselves. As is to be expected, younger immigrants tend to have been in the country of immigration a shorter time than older immigrants, in part because adults initiating immigration are usually still in their twenties. However, this double criterion (age at arrival, period of stay) does not create a neat binary division in our small sample of speakers because some immigrants who are now young adults arrived in Quebec with their parents a number of years ago. One characteristic which is probably decisive in L2 acquisition (see Klein and Dittmar, 1979, Clahsen et al., 1983), and which divides eighteen informants evenly is whether or not the informant went to school beyond grade four, the end of the first cycle of schooling in Portugal. But this characteristic is related to age and age at arrival: the younger the speaker within our age group, the more likely he or she is to have more schooling. The younger he was upon arriving in Quebec, the more likely he is to have continued his education there.

The attempt to find out what social factors affect L2 competence presupposes distinguishing weak from strong speakers on linguistic grounds. We therefore turned our attention back to our predicted problem areas in the acquisition of French by Lusophones, to see whether the presence or absence of certain forms distinguish some speakers from others.

Viewed in this binary fashion, the search appears to have been in vain, at least with respect to certain points of interest. All seventeen speakers whose corpora we examined in detail appear to use null subjects (i.e., there is at least one example in each corpus), but they are frequent for only two of the speakers, neither of whom appears to be the weakest of the group. We will see below that the interesting aspect of this problem is the question as to where null subjects can occur.

Likewise with the qui/que rule: our hypothesis that confusion would occur between these forms is widely confirmed. Any attempt to distinguish weak from strong speakers on the basis of presence or absence of qui/que neutralization would be misleading, since such errors are rare in all the corpora (compared to correct qui's and que's). They occur, however, in so many that one is forced to conclude that their absence in a few may well represent an accidental gap. More interestingly, if these rare errors are pooled for the sample as a whole, qui may (erroneously) replace que, as well as the inverse, which was expected. This would seem to distinguish French as spoken by Lusophones from popular native dialects (certain North American ones, for example) in which qui ——> que, but not the inverse. We will return to the still more interesting question as to how the density and the functional variety of the qui/que forms may distinguish weak from strong speakers.

As to the use of past tense forms: for most speakers, substitution of the present tense in past narratives is rare, but again, occurs at least once in the corpus. Frequent use of the présent in clearly past contexts, however, characterizes only four of the eighteen speakers studied, who, on other grounds as well, appear to be comparatively "weak". We have seen above that the speakers do, for the most part, use the appropriate French past tense forms in narratives.

Finally, we can briefly look back to the way the speakers answered the hypothetical questions meant to elicit conditional forms. Here again, only four speakers failed to use any conditionals at all. More significantly, however, many speakers produced very few conditionals, and in contexts clearly appropriate to them, they substituted the interesting forms to which we have alluded above.

Thus the syntactically obligatory categories on which we focussed: subjects, complementizers and relative pronouns, were used so pervasively and with so little deviation that their use alone fails to distinguish groups of "strong" and "weak" speakers. The categories which were obligatory only because of the semantics of the discourse, on the other hand, would seem to have identified speakers who were, and who were not, at ease with French verbal morphology beyond the present tense. The former group, in their turn, showed interesting uses of various forms in the paradigm.

Results of a more detailed inspection of relatives, complementizers, and null subjects

An inventory of the qui and que forms in the corpora of seventeen of the Lusophones showed that even the weakest and least loquacious speakers used both of these forms, and in more than one function. We have already seen that there were very few errors in their use, though qui ——> que, que ——> qui, or both, were attested in all but two of these corpora (see examples in [10]). Apart from these deviations and the rare use of que as a pre-INF complementizer (10), the speakers generally used these forms as in native spoken French. In fact, a number of instances of que replacing oblique relatives (où and dont), as in non-standard Québécois, for example, were also found (see [10]).

What would rather seem to distinguish weak from strong speakers here is the density of qui/que forms, and to a lesser extent, the variety of their functions. Very grossly, speakers 5, 6, 7, 8, 11 and 15, for example, produced an average of about ten such forms per page of transcript, while speaker 10 produced about one per page and speaker 2 about four per page. These extremes, of course, reflect notable differences in frequency of embedding among the speakers. For very weak speakers, typical utterances do not contain subordinate clauses. For the stronger speakers, qui appears frequently, almost always as the subject of a relative

clause, in which function it is occasionally replaced by que, as we have seen. As in native corpora, its use as a human prepositional object in oblique relatives is rare (see, however, the example from speaker 6 in [10]). Que, again as for Francophones, is ubiquitous, mainly as a complementizer, alone or after a variety of subordinating WH words and adverbs, of which the most frequent by far (especially for weak speakers) is parce, whence parce que 'because'. Que is also frequent as the direct object relative pronoun, only occasionally replaced by qui. Most of the corpora examined also contain examples of que as the conjunction in comparisons: plus que, moins que, mieux que ('more than', 'less than', 'better than'), and so on. A number of occurrences of the restrictive ne + V + que, as in Je n'ai que INF ('I have only to INF'), and the characteristically Québécois rien que ('nothing but, only') were also found.

It would be difficult, then to distinguish most of these corpora from ones of native speakers solely on the basis of the use of relatives and complementizers in context. One would have to know that Portuguese has no qui/que alternation, and then ferret out the few examples of their neutralization in this corpus. It would appear that qui, que and their basic functions are primordial and eminently learnable aspects of French syntax for L2 speakers, even when the L1 works differently in this respect.

In what contexts do our Lusophone informants show null subjects? Mainly in impersonal constructions and before pronominal verbs. Of the 92 occurrences in seventeen corpora, 27 fall into these categories. The two pronominal verbs typically used without subjects here were s'appeler ('to be called') and se dire ('to be said'), with passive meanings, as the glosses suggest (see [11]). The example in (11) from speaker 2 combines an impersonal null subject with an incorrect subcategorization of the verb travailler ('to work') as a pronominal. Almost all the other null subject contexts in the corpus can be filled by first or third person pronouns from clauses in the immediate environment. In only 17 instances is it the case that, by itself, the verb form, with or without a reflexive pronoun, indicates the person and number of the missing subject. This follows from the person and number neutralizations characteristic of French verbal morphology, especially in the first conjugation, which contains most verbs. Thus it is the surrounding discourse which is nearly always necessary and usually sufficient to supply the missing subject.

Conclusion: A social and linguistic sketch of the "strong" and the "weak" speaker

The ideal "strong" Portuguese speaker of French arrived in Montreal during adolescence and had some secondary education there. By the latter fact alone, he or she is a highly educated member of the Portuguese community. In a semi-directed interview,

he or she produces very few null subjects and a high density of qui/que relatives/complementizers. These latter forms appear in all the functions which would be found in the "ideal" native corpus, for a socially comparable speaker in a comparable register. He or she uses the passé composé and the imparfait in narratives almost entirely as Francophones do, and responds, at least once, to hypothetical questions with a conditional verb form. There is surely a great deal more to discover about such speakers.

The ideal "weak" speaker arrived in Montreal after the age of 25. He or she had less than five years of schooling, in Portugal; that is, he did not go beyond the first cycle of schooling there. In a semi-directed interview, he or she is not loquacious. He may or may not produce several null subject sentences. The density of qui/que forms is low in his or her speech, and/or, among them, parce que and lone que complementizers dominate the other functions. He or she narrates partly in the présent, where past time is meant, and/or uses French past participles as apparent preterites. He may or may not produce a conditional clause in response to a hypothetical question. If any extended passage continues his response, the verb forms will be in the présent. Obviously, we also have a great deal to learn about the grammars of "weak" Portuguese speakers of French as a second language.

A postscript: What kinds of linguistic forms can be "elicited" in interviews?

One of the first goals in this study was to see whether we could "elicit" all the French forms of interest to us in a semi-directed interview. It now seems clear that "elicitation" is a misleading term when applied to trying to make people talk in such a way that they will produce certain of the forms studied here. Past tense forms and conditionals, or their substitutes, are "elicitable" in a semi-directed interview, in the sense that one can ask questions whose answers require their use, if they are to be optimally cohesive with the question.

Subjects, relative pronouns and complementizers, on the other hand, cannot be elicited without giving metalinguistic instructions to the informants. They are, however, obligatory in well-formed adult discourse. It is therefore meaningless to talk about "eliciting" them in an interview. They will occur, but not systematically in answer to any particular question, unless it is metalinguistic. Past tenses and conditional verb forms are elicitable because they are based on semantic categories which can be introduced into the discourse by the preceding question, which then imposes cohesion constraints, as mentioned above. It appears that in discourse, then, syntactic functions (such as subjectivization, relativization, and complementation) are obligatory, and it is semantic categories which can be elicited.

NOTE

* This study has been funded by the CAFIR of the Université de Montréal and by "Défi 85", a summer student employment programme of the Canadian Ministry of Employment and Immigration. Our thanks to research assistants Bozena Majkrakova and Jean-Pierre Nault for their work on interviews, transcription, and organization of data, and to Professor Calvin Veltman and Ms. Tina Ianonu of INRS for access to valuable information leading to the recruitment of some of our informants.

APPENDIX

(1) F : s'il perd son argent, il est récompensé.
P : Se ele perde seu dinheiro ele é recompensado.

(2) S'il perd son argent, il sera récompensé.
S'il a perdu son argent, il a été récompensé.

(3) IF THEN
Se ele perder seu dinheiro, ele será recompensado.
" vai ser "

(4) IF THEN
S'il perdait son argent, il serait récompensé
S'il avait perdu son argent, il aurait été récompensé.

(5) IF past subjunc. perder 'lose' cond. ser 'be'
Se ele perdesse seu dinheiro ele seria recompensado
imperfect " ia ser "
ir 'go' " era "imperfect
ser
cond. ter p.p. ser
Se ele tiresse perdido seu dinheiro ele teria sido recompensado
past subjunc. ter 'have' " ia ser "
" era "

(6) *il venu; *Ø commenc/e/ */ʒɛkɔmãsɛ/

(7)

	Portuguese		French
SUBSTITUTIONS:	IMPF. ele perdia	→	IMPF. il perdait
	PRET. ele perdeu	→	P.C. il a perdu
		→	PRES. il perd
		→	P.P. *il perdu

(8) Interviewer : La toute première chose que vous feriez?
Speaker no 5: bon... il fallait aller au Portugal... déjà prendre... bon... si je gagnais un million j'allais là-bas ... je passais deux ou... deux ou trois mois... avec ma

famille... en été puis alors... je recevais... je commençais à mettre les pieds en terre... commençais à faire les placements...

(9) Speaker no 4 : *Si je gagnais un million de dollars, je peux faire beaucoup de choses.

(10) Speaker no 3 : *Les problèmes plus grands que nous arrivent ici...

Speaker no 6 : *C'est cette famille-là qu'a /resev/ ... a reçu mon mari. But : *... et avec qui Ø a resté pendant les premiers mois...

Speaker no 1 : *parce qui la vie au Portugal c'est difficile ...

Speaker no 3 : * Je pense que acheter... (cf. Teyssier, 1984, p. 233).

Speaker no 7 : *ce qui je veux ...

Speaker no 5 : il y avait des problèmes... qu'on peut pas parler (dont ⟶ que)

Speaker no 6 : *comme toi arrive un point que tu dis... (où ⟶ que)

Speaker no 8 : *qui je l'ai connu...

Speaker no 11: *chose que c'est très difficile expliquer

(11) Speaker no 2 : *Ici Ø se travaille beaucoup...

Speaker no 12: *Ø s'appelle en portugais...

Speaker no 11: Comment Ø se dit là?

Speaker no 14: Ils parlent beaucoup le français et l'anglais en même temps que Ø parlent portugais.

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SLANG AND CULTURAL KNOWLEDGE

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Linguists agree that communicative competence consists of more than knowledge of phonological, morphological, and syntactic rules accompanied by knowledge of the definitions of words. In order to produce and understand language in context, speakers must have additional kinds of knowledge, often lumped together under the term pragmatic. In practice, linguistic knowledge and pragmatic knowledge are not easily separable. Moreover, pragmatic knowledge cannot simply be dismissed as beyond the bounds of language study, for research over the past decade in particular has shown that various sorts of social and cultural factors contribute in important ways to the meanings of utterances. Pragmatic knowledge thus presents a problem to theories that attempt to account for speaker-hearer competence. This paper offers no breakthroughs in theory. Instead, it shows yet another instance in which the contextually appropriate use of language depends on cultural knowledge.

As the difference in age between my students and me has grown greater, I have become increasingly aware of how important cultural knowledge is in the production and maintenance of their slang. The first generation of college students that I taught have now become the outmoded granolas, bohems, hey-wows, and groovers of the mid-80's--the left-over flower children who wanted to make love and not war and who bought record albums to help starving Bangladesh with much the same spirit as young people today are supporting Band Aid and Live Aid concerts to help famine-ridden Ethiopia. In the late sixties, student slang was filled with terms for drugs and amphetamines and the effects of these substances on the mind and body, and popular songs were transmitters of such vocabulary, sometimes directly ("One toke over the line, sweet Jesus.") and sometimes not so directly (Lucy in the Sky with Diamonds, expanded from the acronym LSD). Many words that college students used then are still being used: bummer 'unpleasant experience', crash 'to go to sleep', machine 'motorcycle or car', rip off 'an unfairly high price'. But other words, particularly those alluding to popular entertainment, had a shorter life span. For example, in 1972 at UNC-CH a concert that proved to be intensely enjoyable could be called a pink floyd, after the name of a British rock group. Part of knowing the meaning of the expression pink floyd was knowing the allusion, and knowing that the group made "weird, cosmic" music and that its leader was a lunatic. It is this segment of slang vocabulary, whose meaning or popularity is linked to cultural knowledge, that

this paper examines.

College slang often has its source in recreational pursuits: television, movies, popular music, and sports. Here are some examples which I have collected over the past dozen years from students at UNC-CH.

TELEVISION

Commercials: Beef-a-roni 'good looking male', formed on the product Rice-a-roni. ("Rice-a-roni, that San Francisco treat.")
Cram-omatic, 'to study hard for a test', formed on the advertisement for the Ronco Veg-o-matic.
Know what I mean, Vern? 'Do you understand?' from a Pine State milk commercial.

Andy Griffith Show: otis 'drunk', from the name of Mayberry's town drunk.
nip it 'stop it', from Deputy Barney Fife's solution to the crime of jay-walking ("Nip it in the bud.")

Star Trek: Beam me up, Scotty.
There's no intelligent life here.
OK, Spock.

Happy Days: Sit on it.
Pooh-bah and its derivative roo-hah, 'nice'. ("He's a real roo-hah sort of a fellow.")

Alice: Kiss my grits.

Hawaii 5-O: Be there, aloha.

The Gong Show: Gong, from the gong ending an act. ("Gong on wearing those pants.")

Truth or Consequences: Wank, from the sound of the buzzer. ("Don't read that book. It's a real wanker.")

Mr. Rogers: Sure, I knew you could.

Lone Ranger: masked man 'homosexual'

Saturday Night Live: parental units, from the Cone Heads' skits.
gumbey, gumbeyhead, from Eddie Murphy's characterization of the green toy Gumbey.

Such expressions do not necessarily originate with the script writers of these television programs. For instance, Sure, I knew you could is ordinary colloquial English, and from the mouth of television's Mr. Rogers it is an assurance to young children appropriately used. In slang it is given an ironic interpretation and is used to belittle, to treat an adult like a child. Items appropriated from television can change meaning in other ways. For example, masked man in 1985 slang refers not to an individual defender of justice who conceals his identity behind a mask for some sort of romantic reasons but to someone who wishes to keep his identity concealed for fear of social sanctions.

Regardless of who invents them, expressions used on television can be disseminated nationally in a single night. The current NBC hit series Miami Vice exudes the latest in style--in photographic technique, music, flashy cars, fast boats, and clothing. The two main characters are undercover policemen with a

vast knowledge of the criminal element of Miami, not the least part of which is their knowledge of the vocabulary and linguistic style needed to survive in that hostile setting. Slang items that had previously been popular among pockets of speakers like college students or drug users now reach the ears of the public at large. Their meanings are usually immediately apparent from the context.

On Miami Vice, no activity ever happens; it goes down: "The deal is going down right now." "You hear anything going down, you call us, you hear?" "We're sorry it went down this way." Instead of hello and good-by, characters say What's happening?, What it is, blood?, and Check you later. Terms of disdain abound: low-life, slime-bucket, scum, pig, sleeze. History, currently used in college slang to signal good-by, means the ultimate good-by: "You're history." (a death threat); "Ten minutes and thirty seconds and we're history." (said while trying to detonate a bomb); "Six are already history." (six people on a hit list had already been killed). Among other items current in UNC-CH slang and heard on this season's Miami Vice are attitude 'a negative or uncooperative attitude', "This guy has an attitude, a real attitude."; boogie 'leave', "Lombard's going to boogie."; book 'leave', "Why did you book from custody?"; homeboy 'person from your home town'; chill out 'calm down, stop'.

The July 12, 1985, episode of Miami Vice featured a character named Noogie--a black, street-wise police informer who can be found in a raucous nightclub in various guises. Noogie talks prose with a beat and rhyme and plays with words and their meanings. At one point when he says Let the Noogie boogie, it appears to mean "Say what you want so that I can respond." He sounds like one of the rap records currently popular among teen-agers, and my guess is that the resemblance is deliberate.

MOVIES

Since the beginning of the talkies, motion pictures have been the source of numerous words and expressions, some of which hang on in informal and usually humorous usage for decades, like "Why don't you come up and see me some time?" or "Me Tarzan. You Jane." or "an offer you can't refuse." The tough characters portrayed in films by Humphrey Bogart in the 1940's gave rise in 1970's college slang to the verb bogart 'to steal, take an unfair share' ("Emile bogarted my sweats.") "Here's looking at you, kid." from the 1942 film Casablanca is even part of the lyrics of a currently popular song about lovers who "had it all, just like Bogey and Bacall" in the 1948 film Key Largo. A term for 'female breasts' used in college slang in 1983, bodacious ta-tas, was taken directly from the film An Officer and a Gentleman.

In recent years, the new genre of teen exploitation films, like Animal House and Porky's I and II, has given direct access to racy and often raunchy new vocabulary, particularly among high school students who often have to use subterfuge to get to see these sexually explicit films. Fast Times at Ridgemont High (1982), popularized the term gnarley 'disgusting'. The vocabulary of any film or tape done by Eddie Murphy is required knowledge for high school

and college students who aspire to be au courant. Among the items used in Eddie Murphy's 1984 Trading Places are scumbag, jive turkey, Hey--what it is! (a greeting), and Let's kick some ass/some butt. The importance of mastering current vocabulary is underscored in a brief but telling scene in Risky Business (1984), in which one high school senior inadvertently reveals to another that he does not know that two sexual terms are synonyms. Luckily, the two were best friends, and the faux pas was not disclosed to anyone else.

MUSIC

The lyrics of songs remain an important source of college slang. The New Wave group B-52's has provided Private Idaho 'one's own little world' and limburger 'a girl no one else would date'. The old phrase bite the dust got a new life in the fall of 1980 because of the song "Another One Bites the Dust" by the rock group Queen. Brick house, 'a good looking girl' was used in the spring of 1979 because of the Commodores' "She's a Brick House." And Bozo, 'a foolish, outrageous, or ridiculous person', ultimately from Bozo the Clown, was reinforced in 1972 by the popularity of the album "We're All Bozos on this Bus."

A five-minute single record by 15-year-old Moon Unit Zappa of San Fernando Valley was responsible for spreading the phenomenon of Valley Girl talk throughout the nation during the summer and fall of 1982. Poorly understood by journalists, talk-show hosts, and middle-aged parents, Valley Girl talk was much more distinctive in style of delivery than in vocabulary, which was quite derivative. Among the words popularized by Valley Girl talk were totally, awesome, grody, gag me with a spoon, tubular 'excellent' (from surfing), rad (from radical) and zod, spaz, goober, and geek.

SPORTS

Sports have given a few words, viz., shoot some hoop and shoot the peel from basketball, smooth and glassy and tubular from surfing, and do a 12 oz. curl 'drink beer' from weight lifting.

I suspect that MTV and Rappin' music are currently influential, if only as additional ways to keep the supply of fashionable words constantly changing. And comic books and cartoon strips like Doonesbury are potential sources too.

Regardless of the particular sources, it is evident that cultural knowledge is an indispensable component of the mastery of college slang. Let us now examine why this is so. Slang serves two important but not distinct functions for college students, fashion and group identification.

Slang, stylish clothing, and modes of popular entertainment have much in common in terms of fulfilling human needs. Like stylish clothing, effective slang must be new, appealing, and able to gain acceptance in a group quickly. Television, movies, and music also proclaim the gospel of fashion: newness is not only good but also the route to social acceptability. Adolescents, for normal and healthy reasons, seek the sense of belonging that subscribing

to fashion in all these areas can bring about. Knowledge of the latest hit TV programs, films, and music is a sign of social awareness and an acknowledgment of the importance of relationships with others. At the turn of the century, philologist Hans Oertel argued that the acceptance or rejection of a sound change may be parallel to the acceptance or rejection of a fashion: ". . .in practice the individual is not free to accept or decline a fashion if he is to maintain his place in the circle which has decided in favor of it. No one need follow a fad, because that is purely individual; but he who refuses to follow a fashion, which is social in character, will find himself isolated exactly as he who maintains or affects an unusual or disapproved pronunciation." (1901: 145)

The social force of slang may be its most important identifying characteristic. Slang is typically cultivated in peer group contexts, among people in a society who have little real political power--like adolescents and college students. Sharing and maintaining a constantly changing, and sometimes secret or mysterious, slang vocabulary aids group solidarity and serves to include and exclude members.

The examination of the cultural allusions of college slang raises some broader issues.

With the possibility of instant and widespread communication, the group identifying functions of slang may be diminishing in favor of identification with a style or an attitude rather than with a group. I have noticed that low-life has become ubiquitous in the past year, as has sleeze 'dishonest, corrupt', the latter thrust into national prominence in headlines, editorials, newscasts, and political cartoons in reference to presidential advisors. If the items low-life and sleeze can be called slang, they are a kind of national slang and say little about group identification.

Though the mass media provide a natural source for culturally determined slang, college students and other groups draw from the media selectively. The studies of William Labov and others have shown that hours of exposure to the grammatically standard and dialectally non-distinctive speech of national radio and television have had little effect on the speech patterns of the listeners. Despite access to more prestigious varieties of the language, groups of low-status often choose to maintain their linguistic distinctiveness as a symbol of solidarity. (Milroy 1980: 18; Ryan 1979: 155)

Etymological issues arise. When an expression like Kiss my grits! or dingbat zooms up in frequency a million-fold because of its use on a television program, that becomes an essential part of the eytmology of the phrase, perhaps more important than its first occurrence. Also, the role of the popular individual in initiating vocabulary change seems more probable and noticeable with the possibility of super-stars like Eddie Murphy or Joan Rivers ("Can we talk?") reaching millions at a time. Etymological obscurity is another problem. At first the cultural allusion is part of the meaning of the slang item. When the connection between the cultural phenomenon and the linguistic form gets lost, then such slang items present etymological problems. The current

application of the phrase on the rag 'disagreeable' to a male shows that the original connection with menstruation has been lost. Such dissociation is not unusual in college slang, which often refers to things of fleeting interest.

Cultural knowledge is an important part of the unselfconscious use of college slang and probably plays a greater part than has previously been recognized in informal, everyday language use too.

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LINGUISTIQUE ET SCIENCES JURIDIQUES: L'EXPERTISE LINGUISTIQUE DES DECLARATIONS. PROBLEMATIQUE ET ETUDE DE CAS.

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0. INTRODUCTION

Les rapports entre linguistique et sciences juridiques se fondent sur un point capital : l'importance pragmatique du texte, qu'il s'agisse de lois, de contrats, de déclaration orales ou écrites dans l'administration de la justice, du moins au Canada. Compte tenu de l'enjeu, il est étonnant de constater que ce champ recherches interdisciplinaires a jusqu'à présent attiré peu de linguistes. La bibliographie est maigre comparativement à la somme de publications sur d'autres discours qui ont un impact social tangible : mass media, discours politique, etc. Il y a ici et là quelques interventions pour dénoncer certains aspects des textes juridiques qui les rendent hermétiques au citoyen ordinaire : complaisance dans le jargon technique, anachronisme et lourdeur de certaines expressions et de la phraséologie en général. Mentionnons quand même le numéro spécial de la revue TEXT (1984, 4-1/3) consacré à l'étude du discours juridique. On peut y ajouter Hoey (1984). Mais jusqu'à présent, les travaux les plus importants au Canada et au Québec en particulier sont ceux des traducteurs, terminologues (Sparer et Schwab 1980, Gémar 1982), et des juristes (Pigeon 1965, 1978).

Cependant les linguistes sont de plus en plus "invités" à titre d'expert à éclairer la Cour sur des questions touchant la langue et le discours. Les problèmes soulevés sont multiples. Limitons-nous ici aux déclarations dont l'authencité est remise en cause par les avocats de la défense, notamment en cour criminelle. Ces déclarations amenées en preuve par la Couronne sont supposées être le texte intégral des aveux faits par l'accusé pendant l'interrogatoire. Mais la transcription, ou parfois la rédaction, est faite par les policiers. Qu'est-ce que l'avocat demande au linguiste? Sur quelles données porte l'expertise? Quels problèmes méthodologiques et pratiques se posent alors? Voilà quelques questions auxquelles nous essayerons de répondre en nous fondant entre autres sur deux cas pour lesquels nous avons été appelé à témoigner en Cour Supérieure (Province de Québec). La première cause, en 1980, que nous désignerons par HISPA est celle d'un immigrant hispanophone à Montréal qui a été accusé de meurtre. Il parlait à peine le français (il suivait des cours de langue de niveau intermédiaire) et son interrogatoire avait été mené sans interprète. La deuxième cause, en 1984, que nous

désignerons par ATIK, concerne une amérindienne accusée de tentative de meurtre. Sa langue maternelle est l'attikamek mais elle avait fait son cours primaire en français dans une école de la réserve. Pour une cause analogue, aux Etats-Unis, voir Gumperz (1982).

Les leçons que nous avons tirées de ces expériences même très limitées, les échanges que nous avons eus à ces occasions avec des collègues juristes, les analyses que nous avons faites, fourniront la matière de cette réflexion.

1. QUESTIONS PERTINENTES DU POINT DE VUE JURIDIQUE

Nous n'avons pas la prétention de traiter ici les aspects du problème qui relèvent d'abord de la compétence des avocats. Il leur revient en tant que clients de préciser leurs besoins et de définir les points où l'intervention des linguistes serait utile. En ce qui concerne les déclarations et aveux, contentons-nous de citer Kaufman (1979, supplément), un juriste qui fait autorité en la matière:

> "Misunterstanding, not to speak of errors, may occur where an accused and his interrogators fail to communicate fully by reason of language. Clearly, there is some danger that any statement so obtained does not reflect the will of the accused, and judges - with the help of Counsel - must screen such circumstances with great care." page 46

L'hypothèse à prouver - ou à infirmer - serait donc la suivante : le témoin n'a pas la compétence requise pour émettre, en tout ou en partie, une telle déclaration. Evidemment la défense est en meilleure posture s'il en ressort que le témoin n'était même pas en mesure de comprendre ce qu'on lui a fait signer, bien entendu, en toute bonne foi. Il en est de même lorsque les sections de la déclaration mises en doute sont celles dont le contenu est le plus crucial pour la cause.

Dans les cas qui nous concernent, on a contesté l'authenticité quasi-complète des déclarations attribuées aux témoins, ainsi que la possibilité pour le témoin HISPA de comprendre le texte qu'il a signé, voire même les questions qui lui avaient été posées. Le témoin ATIK pouvait comprendre l'essentiel des thèmes et arguments mais trébuchait de façon évidente sur des passages plus nuancées ou plus complexes syntaxiquement.

Kaufman (1979) rapporte d'autres causes où la défense a attaqué les traductions douteuses, incomplètes ou imprécises. La plupart des cas d'interventions des linguistes en cour criminelle ont ceci en commun que les policiers-enquêteurs sont des locuteurs natifs alors que les témoins sont des non-natifs qui

ont une compétence variable dans la langue utilisée pour l'interrogatoire ou le procès-verbal. Mais les problèmes de compréhension, de fausse interprétation des questions ou des réponses, d'ambiguité etc. ne sont par étrangères à la communication entre natifs, bien au contraire. Donc les risques de déformer la pensée d'un témoin dans un discours rapporté demeurent. C'est d'ailleurs pour prévenir cet état de choses que les directives aux policiers insistent sur la transcription la plus fidèle possible des propos, sans correction stylistique. Citons encore Kaufman (1979):

> "Whenever a police officer writes the statement,he shall take down the exact words spoken by the person making the statement, without putting any questions other than such as may be needed to make the statement coherent, intelligible and relevant to the material matters" pp. 385-386.

> "In writing down a statement, the words used should not be translated into "official" vocabulary; this may give a misleading impression of the genuineness of the statement." p. 387.

Ainsi la contestation d'une déclaration peut partir des hypothèses suivantes:

a) Le témoin n'a pas la compétence linguistique requise pour produire intégralement la déclaration, trop bien rédigée, qui lui a été attribuée.

b) Le témoin n'a pas la compétence linguistique pour comprendre les termes d'un rapport qu'on lui a lu et fait signer comme étant la transcription de sa déclaration.

c) Le témoin, indépendamment de sa compétence linguistique, a eu du mal à communiquer avec ses interlocuteurs, de sorte que les risques de fausse interprétation, de déformation involontaire de la pensée de part et d'autres sont trop grands.

Il est évident que a) et b) peuvent être plus facilement prouvées, le cas échéant, par des faits purement linguistiques; alors que c) est un cas plus complexe qui exige en plus une analyse de l'énonciation et de l'interaction verbale (Gumperz, op.cit. 1982). Signalons enfin que la démonstration de chacune de ces hypothèses, même si elle est faite de façon satisfaisante, n'a pas respectivement le même poids sur le déroulement et l'issue du procès.

2. SUR QUELLES DONNEES PORTE L'EXPERTISE?

2.1. Elle porte en premier lieu sur le texte de la déclaration elle-même c'est-à-dire les questions et les réponses. Les avis préliminaires, et les attestations de toutes sortes déjà imprimées sur les formulaires et dont le témoin est censé avoir pris

formellement connaissance, doivent aussi être inclus à cause notamment de leur importance au point de vue juridique, mais aussi à cause des problèmes de compréhension qu'ils posent parfois. Très souvent il s'agit de textes écrits, mais il n'est pas rare qu'on rapporte verbalement des propos attribués à l'inculpé, et enregistrés "de mémoire" par des témoins à charge. Dans la cause ATIK le procureur de la Couronne a essayé de faire admettre en preuve une phrase assez incriminante que le témoin aurait dite au moment où les policiers sont venus l'arrêter, donc avant l'interrogatoire formel.

"Je sais pourquoi vous venez m'arrêter, c'est parce que j'ai voulu noyer ma fille".

Nous ne traitons pas ici de la contestation des enregistrements faits à l'insu des inculpés, sur table d'écoute par exemple (1).

2.2. Echantillons de discours et tests de langue

Etant donné qu'il faut essayer d'établir et décrire la compétence grammaticale et communicative du témoin pour pouvoir vérifier les hypothèses, il est quelquefois nécessaire d'avoir des échantillons assez variés et assez représentatifs de son discours réel. Nous avons dans la cause ATIK procédé par voie d'enquête et d'interview, avec les difficultés que l'on rencontre habituellement dans ce genre d'expérience en sociolinguistique et psycholinguistique: il fallait briser la glace, vaincre la peur du magnétophone et le stress assez compréhensible que le témoin éprouve dans les circonstances. A certains moments où l'interview était formellement interrompu ou terminé, j'ai pris des notes sténographiques.

Dans les deux causes je me suis fié aux résultats de tests de langue. Pour HISPA c'était un test de classement passé peu de temps auparavant à son cours de langue. Les autres renseignements pertinents nous ont été communiqués par son professeur. Pour ATIK c'est une batterie de tests (dont un Cloze) que Kathleen Connors et moi-même avons expérimentés dans des études sur des étudiants de français en immersion.

Dans les deux cas nous avons pris aussi comme point de comparaison les résultats d'analyse de la performance de locuteurs natifs. Dans le cas de HISPA, des échantillons de discours du corpus SANKOFF-CEDERGREN nous ont permis de soutenir que la

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(1) Notre collègue Laurent Santerre a été invité à plusieurs reprises à éclairer la Cour sur la possibilité d'identifier les voix enregistrées, par des analyses phonétiques et acoustiques.

déclaration en cause avait plus de chances d'être produite par un locuteur natif montréalais de classe moyenne-inférieure que par un hispanophone qui est au niveau intermédiaire des cours de français langue seconde.

Enfin nous avons rassemblé tous les renseignements de nature à nous éclairer sur l'expérience linguistique des témoins: milieu de vie et de travail, fréquentation, dossier scolaire etc.

3. QUEL TYPE D'ANALYSE EST LE PLUS APPROPRIE?

La seule réponse honnête c'est: tout dépend de la cause et des données à notre disposition. N'empêche qu'on peut affirmer qu'une approche purement théorique servirait mal la cause. A notre avis une étude fondamentalement descriptive, à différents niveaux de structure linguistique, convient le mieux à une présentation claire, simple et concrète des faits sur lesquels on se fonde pour démontrer l'hypothèse. Les descriptions structurales classiques (syntaxique, lexicale, morphologique et le cas échéant phono-graphique), qui servent de cadre pour établir le niveau de compétence grammaticale du témoin, et expliquer les interférences, sont élargies pour pouvoir inclure l'examen du processus discursif et des règles d'interaction. Comme il s'agissait pour nous de contester l'authenticité des déclarations, nous les avons donc analysées à tous les niveaux en montrant d'une part ce qui aurait pu être produit par les témoins et ce qui selon toute vraisemblance ne pouvait pas leur être attribué, compte tenu de leur compétence en français. Voici quelques exemples:

3.1. Au niveau du discours

HISPA pouvait bien raconter sa journée et se faire comprendre pour l'essentiel, mais il était improbable qu'il ait fait un récit de près de 600 mots sans "soutien" de la part de l'interlocuteur (les questions n'ont pas été rapportées dans cette partie), sans phrases inachevées ou recommencées. De même la formulation de certaines questions lui laissait peu de chances de comprendre adéquatement ce qu'on lui demandait. Exemple d'une double interrogation avec une condition:

> "Pouvez-vous nous dire si vous avez eu une dispute avec Fxxx et si vous voulez nous dire ce qui est arrivé si oui?"

ATIK avait aussi des problèmes à interpréter de façon juste certaines questions. Elle confondait par exemple "Combien de temps/ depuis quand/depuis combien de temps ...". De plus sans être intentionnellement piégées, certaines questions comportaient des présuppositions que le témoin n'était pas en mesure de saisir et de dénoncer.

"Avais-tu déjà pensé ou dit à quelqu'un que tu voulais tuer ta fille"?

A noter que nulle part dans ses réponses ATIK n'avait déclaré ou fait entendre même implicitement qu'elle voulait tuer sa fille.

3.2. Au niveau syntaxique et morphologique

C'est la longueur des phrases (en nombre de mots), leur complexité (enchâssement ou subordination) et leur degré de grammaticalité qui ont attiré notre attention. Dans la déclaration HISPA, à côté d'énoncés comme:

"moé commencé la"

"pis je retourne Dxxx[au lieu de: chez Dxxx],"

qui sont typiques d'un locuteur de ce niveau, on trouve des séquences bien structurées - grammaire du français parlé -: subordonnées complétives, comparatives, avec déplacement syntaxique approprié, effacement, placement de clitiques, et même le respect des concordances de temps.

"il me demande de faire la femme et lui l'homme"

"je l'ai coupé en morceaux avec le même couteau que je l'ai frappé"

"rendu chez Dxxx, j'ai demandé à Dxxx d'appeler au [restaurant] F pis de dire que Fxxx et Pxxx étaient malade pis y iraient pas travailler"

Dans la déclaration ATIK nous avons relevé 9 phrases complexes contenant entre 3 et 5 propositions enchâssées - alors que et à l'oral et à l'écrit le témoin arrivait à peine à bien former une phrase simple avec une complétive ou une relative. Dans les deux cas, nous avons relevé des formes syntaxiques idiomatiques et des règles morphologiques (sous-catégorisation, emploi des prépositions, conjugaison verbale, accord en genre et nombre, etc) que seuls les locuteurs natifs arrivent vraiment à maîtriser.

Le problème n'en est pas seulement un de reformulation ou de réécriture anodine. Dans la déclaration ATIK, les subordonnants de relation causale et implicative A CAUSE DE, PARCE QUE, PUISQUE sont employés avec une fréquence qui soulève bien des doutes, d'autant plus que le témoin ne les a pratiquement pas utilisés dans l'interview avec nous. A noter que dans sa langue maternelle, c'est plutôt la structure parataxique qui est privilégiée en pareil cas. Raison de plus pour nous faire conclure qu'ils ont pu être "ajoutés".

3.3. Le vocabulaire

Nous en avons fait une description qualitative et quantitative. La précision, le niveau technique (administratif) de certains termes de même que l'abondance des synonymes, l'emploi de dialectalismes (non enseignés dans les cours de langue) ont retenu notre attention dans la déclaration HISPA. Pour ATIK, le témoin n'a pas pu nous donner le sens exact de certains termes assez importants qui se trouvent dans les réponses qu'on lui a attribuées. Par ailleurs les calculs de richesse lexicale, notamment pour HISPA, ont clairement situé l'auteur de la déclaration parmi les locuteurs natifs.

3.4. Les statistiques

Le recours à la statistique linguistique n'est pas toujours possible, surtout si le texte à analyser est trop court ou que la fréquence de certains phénomènes est faible. Ici, dans les deux causes les arguments de type statistique ont joué un rôle majeur non seulement pour l'évaluation de la compétence - résultats des tests, comparaison avec d'autres locuteurs natifs et non natifs -, mais aussi pour caractériser et étudier la progression du vocabulaire et la répartition des catégories. Nous avons remarqué que dans leurs commentaires les juges dans les deux causes ont accueilli favorablement les preuves statistiques.

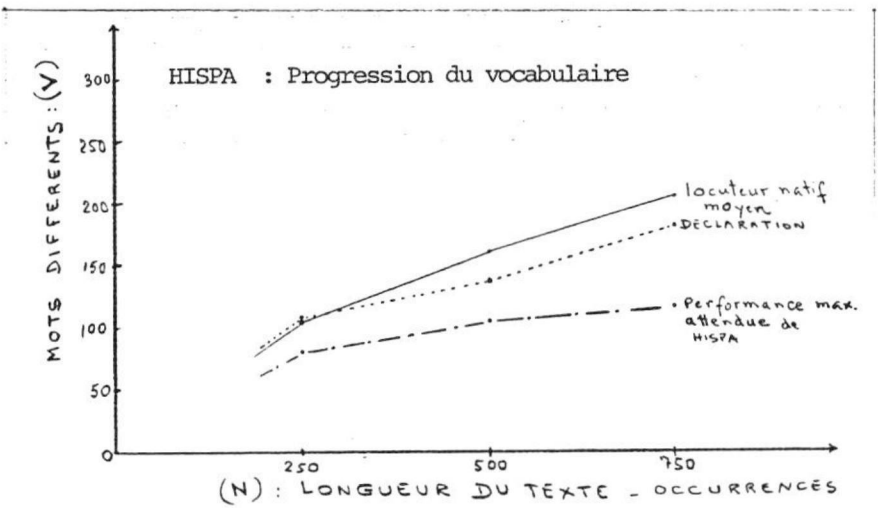
4. QUESTIONS OUVERTES

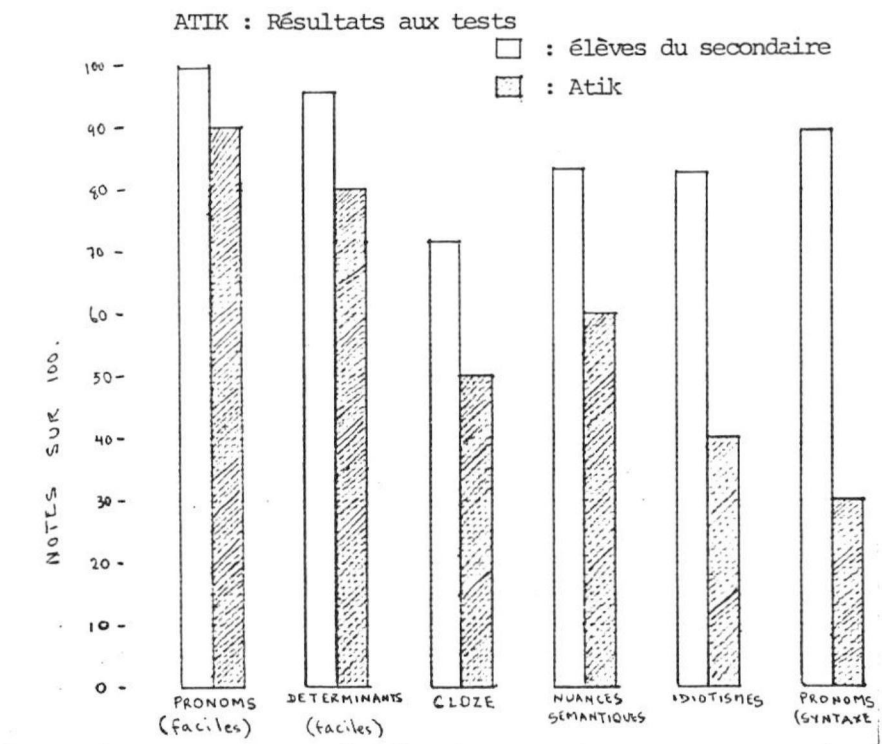
4.1. Objectivité et neutralité de l'expertise

Sans soulever ici des questions d'éthique et de règles professionnelles, il faut être bien conscient du fait que l'expert linguiste vient témoigner en faveur d'une cause à partir d'hypothèses qu'il croit pouvoir soutenir, au même titre que dans n'importe quel exposé scientifique. Par souci d'objectivité - ou par tactique -, il convient de révéler au besoin les limites de nos connaissances et de nos analyses mais jusqu'où peut-on aller dans cette voie sans affaiblir notre argumentation?

4.2. Contre-interrogatoire et contre-expertise

La partie adverse ne manque pas de moyens pour ce faire. Déjà la reconnaissance du statut d'expert ne se fait pas sans douleur. Pour la critique des instruments d'analyse et des postulats, on peut bien essayer d'étaler la polémique entre écoles ou courants de pensée en linguistique : les contradictions ne manqueront pas. Il y a le danger que certaines de nos affirmations soient trop péremptoires, trop généralisantes ou pas suffisamment appuyées sur des faits observables : il suffirait d'un contre-exemple pour rendre tout le reste peu crédible aux yeux des jurés. Enfin, il y a d'autres problèmes plus sérieux : comment s'assurer que le témoin en faveur duquel nous témoignons ne nous


HISPA : Progression du vocabulaire
MOTS DIFFERENTS : (V)
300
250
200
150
100
50
0
locuteur natif moyen
DECLARATION
Performance max. atteinte de HISPA
250
500
750
(N) : LONGUEUR DU TEXTE - OCCURRENCES


ATIK : Résultats aux tests
□ : élèves du secondaire
▨ : Atik
NOTES SUR 100.
100
90
80
70
60
50
40
30
20
10
0
PRONOMS (faciles)
DETERMINANTS (faciles)
CLOZE
NUANCES SEMANTIQUES
IDIOTISMES
PRONOMS (SYNTAXE

a pas "joués" même inconsciemment, en ne dévoilant pas sa vraie compétence au moment de nos enquêtes et interviews? Dans le cas ATIK nous avons inséré dans les textes des séries de questions relativement faciles et qui se recoupaient. Des réponses fausses ou contradictoires signifieraient pour nous qu'elle n'était pas dans l'état psychologique requis pour une telle expérience.

5. CONCLUSION

Si nous avons fait état ici de ces expériences, c'est d'abord parce qu'elles ont été couronnées de succès. Succès total dans la cause HISPA où le juge n'a même pas permis à la Couronne de produire en preuve la dite déclaration devant les jurés. Le jugement a été résumé dans Kaufman (supplément à l'édition de 1979). Succès mitigé dans ATIK où le juge a retenu un point de droit : à son avis le témoin était en mesure de comprendre l'essentiel de ce qu'il a signé. Donc il y a quand même eu une déclaration. Il a cependant, pour notre consolation, fait des commentaires très élogieux sur l'objectivité de l'analyse et nous a invités à présenter les mêmes arguments devant le jury pour contester l'authenticité de la déclaration. Malheureusement à cause de circonstances indépendantes, le procès devant jury a avorté. Si c'était à recommencer, j'aurais insisté davantage sur les problèmes sémantiques à tous les niveaux, qui entravaient le témoin dans sa communication avec les locuteurs natifs du français. Nous voulons enfin inviter les linguistes à s'intéresser davantage à ce genre de problèmes même si cela implique un certain engagement personnel qui va au-delà des spéculations théoriques coupées du monde réel. Les linguistes par leurs recherches doivent continuer à être des agents de changement, et faire des propositions concrètes dans des sociétés multiethniques et multilingues comme le Canada et les Etats-Unis. De ce point de vue l'importance des recherches sur les usages et contraintes linguistiques dans l'administration de la justice n'est plus à démontrer.

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